# The Builder.

VOL. XCIV.—No. 3409. JUNE 6, 1908.


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## *Some Notes on Subcontracting.*

DIFFERENT opinions undoubtedly exist as to whether the term subcontracting is a misnomer or otherwise for the system of allotting particular portions of building works to separate building contractors.

It is probable that the term was oftener correct when the custom more generally existed for a builder to estimate for, and obtain, a contract for the entire erection of a building, and then to sublet certain portions which, for various reasons, he may not have wished to carry out himself. It naturally follows that separation of work for this purpose would follow largely the demarcation between the various trades involved.

The holder of the contract would in this case be known as the contractor, and those taking up the sublet branches of the work would be known as subcontractors.

A more recent development of this system, however, prevents the contractor having any voice in such an arrangement, and in his place the architect provides for and accepts on behalf of his client any advantages that may accrue by a division of the work. To take a typical case. It is proposed to erect, say, a building where certain specialities are to be used, and where even the ordinary construction has peculiarities which demand specialised attention. It may be supposed that the flooring is a good illustration of the first of these, and the sanitary requirements and fittings an example of the second.

The architect would write first of all to the proprietors of the patented flooring and an expert firm of sanitary engineers, and an arrangement would be made for the cost of these particular branches of the work. He would then advertise for tenders for the remaining portion of the building, stating to the intending contractor that a certain sum must be allowed for the particular details reserved—in this case the flooring and sanitary work; and also that the firm sending in the successful tender would be expected to supply the necessary plant, scaffolding, etc., for the whole of the work to be carried out.

Now, it cannot truly be said that the holders of these previously-arranged contracts are subcontractors in the correct sense of the word, but rather that they are contractors for certain branches of which they make a particular study.

As before mentioned, some advantages must accrue, seeing that this system of carrying out works has come into being, and, as may be expected, the question of cost is naturally one that would loom largely in an architect's mind when making any such arrangements.

Cost is affected by, and is one of the fruits of, specialisation, apart from the betterment of the article or material supplied. It is affected by the fact that a greater speed can be acquired by the constant practice of those engaged in handling the specialised material. Although a builder having pride in his resources (including his own knowledge and confidence in his assistants and workmen) may not be willing to acknowledge this, still it must be plain to those only ordinarily observant that such will be the case.

The betterment of the article or material has also to be considered from the point of view of the owner's advantage. Many of the specialised articles now on the market are patented by those exploiting them, and they contain, in the majority of instances, certain items of superiority of which the architect may desire to make use. This leads to another point which gives an opportunity to patentees to contract for the supply of their goods. It is, naturally, impossible for any architect, however well trained and experienced, fully to understand in more than a general way many of the branches of the building trade which deal in fittings, such as, for instance, details of sanitary requirements, appliances necessary for certain systems of ventilation, and others of a like nature.

It can only be expected in such cases that the owners of fittings used for these purposes will be called in to consult and advise as to the methods of use in order to obtain the best possible results, and it cannot be otherwise than expected that an opportunity will be given to them to carry out the requirements at a prearranged price. The legal impossibility of an architect making use of an acknowledged superior but patented appliance without approaching the holder of the fitting has also to be considered. It

follows that a patentee, having everything to gain and all to lose by unskilful workmanship, wisely endeavours to carry out all the work necessary in his own branch, as he knows that the highly-skilled methods of his own workmen, which have been gained by training under his own superintendence, must tend to his own advantage, both from the pecuniary point of view, and that of adding to his reputation for holding an article of merit.

The facility of the mechanic depends largely on the continuance in one class of work, so that he, too, becomes a specialist in the applied labour.

So far as this tends to the desired result, the advantage again reacts to the benefit of the architect, as lessening any likelihood of failure in what has, perhaps, been strongly recommended by him to the owner. Upon such things an architect's reputation largely depends, and it can, therefore, be seen that such a matter as this is one of the minor details upon which a successful practice is built up.

The advantage, or otherwise, to the architect is not, however, the entire matter. The point of view from which the builder has to consider his arrangements must be an important factor in any decision that would place subcontracting among the things to be desired. As before mentioned, the means of building, that is to say, the plant, scaffolding, etc., have usually to be supplied by the contractor who undertakes to erect what may be termed the carcase of the building. Allowance for the cost of this can, of course, be made, but this is not the end of the arrangement. It often happens that, owing to the difficulties that arise in obtaining and supplying specialised material, delays are caused that cannot be foreseen. This may mean that the plant required is in use longer in one place or for one purpose than was intended, and an increased expense may arise which, at the best, is not likely to cause an amicable understanding in carrying out the work.

To some extent this may be due to the fact that in many instances a builder's plant is not unlimited, and any delay in use will upset other arrangements that have been made for profitable working. Also different views may be held by the several contractors as to the best time, ways, and means in which the work may be carried on. From this it will be seen that subcontracting offers practically unlimited means for friction to arise. Opposing interests will clash, and what in its inception may have offered the most satisfactory results may prove a difficult thing from want of that co-ordination which is only possible where a single and complete control is being held. "Many masters, many minds" is a condition to be avoided in this connexion.

Other difficulties also arise in which the men are the greater sufferers. It has been mentioned that a builder's plant is seldom unlimited, and to this may be added that, even where the stock is considerable, it is not the usual practice to send more to the works than is thought needful. Now, it has also been said that the contractor carrying out the principal portion of the building has also to provide the scaffolding. A common clause in building agreements which provides for this is as follows:—

> The subcontractor shall have the use in common with the workmen of the contractors and of other subcontractors of existing scaffolding only.

The necessities of the subcontractor, however, are at times greater than can be met by the existing scaffolding, and it is a common practice for his workmen, not being supplied with requisites by their own employer, to meet pressing needs by making use of plant that is really wanted in other directions. The result can easily be foreseen. A loss of stability and strength to the temporary structures ensues, creating dangers to life and limb.

The beforementioned clause presumes this possibility, for it continues:—

> The subcontractor shall, however, satisfy himself that any scaffolding used for the purpose of this contract is fit and proper for his purpore, and shall be solely responsible for any accidents which may result from the user of such scaffolding or plant to himself or men in his employ.

Although these disadvantages are considerable, it is not probable that any alteration of the systems mentioned of erecting buildings will take place. For one thing they are impermanent, and the work once finished is intentionally lasting and the hoped-for benefits have at least a fair trial. It really resolves itself into a struggle between the specialist and the general builder, with the former holding certain points of superiority from which the latter will not easily dislodge him.

## PROFIT-SHARING AND COPARTNERSHIP FOR WORKMEN.

> "Capitalists are almost as much interested as labourers in placing the operations of industry on such a footing that those who labour for them may feel the same interest in the work which is felt by those who labour on their own account."
>
> JOHN STUART MILL.

THE sentiment expressed in the foregoing quotation did not originate with Mill, but it is only within the last quarter of a century that the doctrine he so strongly supported can be said to have been accepted and adopted to any considerable extent by capitalists as a principle upon which profitable business can be sustained. Glancing back through the ages we see a long line of visionaries, prophets, and social reformers, and observe how often has the heresy of one generation become the gospel of the next; yet it is probably well for the community that progression is usually made in small gradations. Crops flourish under light intermittent showers, but floods destroy them.

This is a non-political journal, and we do not intend to discuss the merits or demerits of Socialism or any other political doctrine. Our object is to bring to the notice of our readers some of the results which have followed the adoption of profit-sharing and co-partnership schemes in large trading concerns. All will agree that the principle of copartnership is good, but many will dispute the practicability of applying the principle in the case of the employees of building firms or firms associated with the building trades. There are many difficulties in the way, and time alone can show whether those difficulties are insurmountable.

It is necessary to distinguish between profit-sharing and copartnership. Profit-sharing consists in giving to each employee a certain share of the profits, in addition to the usual wage. Copartnership involves investment of each employee's savings in the business, and admission of the employee to a share in the management of the business. Copartnership is, therefore, a more serious matter than mere profit-sharing.

The year 1889 must be noted as an important epoch in the industrial history of England, for in that year was introduced the scheme which has resulted in some 5,000 employees of the South Metropolitan Gas Company becoming co-partners in the business controlled by that company. With the sanction of Parliament, two working men elected by employees of the company sit as members of the Board of Directors and have a voice in the management of the company's business.* These employee-directors must be shareholders elected by shareholding employees. The wisdom of entrusting working men in humble position with all the secrets of the Board-room and of giving them the power to oppose the recommendations of their superior officers is questionable; but, whether wise or foolish, it is a fact that for many years past working men have sat on the Board of Directors of the South Metropolitan Gas Company. So far all has gone well, but always under the controlling influence of Sir George Livesey, a man of remarkable ability and strength of character, and it remains to be seen whether the men's representatives will continue tractable under less masterful leadership.

The scheme adopted by the South Metropolitan Gas Company consists in annually placing to the credit of each employee admitted under the scheme a sum calculated as a percentage proportion of his wages. The proportion varies with the price charged for gas supplied to consumers. The lower the price charged the larger is the dividend which Parliament permits the company to divide amongst the shareholders. It is therefore the object of the company to produce and sell gas as cheaply as possible, and, to encourage the employees to work with this object in view, the bonus paid to each employee increases with each decrease in the price of gas, and decreases with each increase. Violent fluctuations in the price of coal have caused fluctuations in the price of gas, and since 1889 the bonus paid to each employee has varied from 3 per cent. to 9½ per cent. of his wages. Each employee is expected to allow his bonus to remain invested in the company's undertaking, but under exceptional circumstances a portion of it may be withdrawn. The employees already own over 300,000*l.* in shares and deposits.

A few other gas companies have adopted profit-sharing schemes, and several more are giving the matter consideration, but only one other company has admitted workmen to seats on the Board of Directors. This is the South Suburban Company, which, like the South Metropolitan Company, has Sir George Livesey for its chairman. The table on the next page, showing the names of companies which have adopted

* Workmen directors were first elected in 1898.

profit-sharing schemes, affords also an indication of the strength of the position which the employees will hold a few years hence.

The amount placed to each man's credit at the end of the first year is very small, and it is not until two or three years have elapsed, and an appreciable sum of money has accumulated, that the majority of the men cease to treat the scheme as matter for humorous ridicule and begin to resent the employment of men who fail to accomplish their fair share of profit-producing.

| Gas Company. | Year Scheme Adopted. | Number of Profit-Sharing Employees. | Bonus Divided Year 1907. | Shares and Deposits of Employees in Company. | Total Capital of Company, 1907. |
|---|---|---|---|---|---|
| | | | £ | £ | £ |
| South Metropolitan... | 1889 | 5,200 | 45,590 | 327,367 | 8,325,340 |
| Commercial..... | 1901 | 1,208 | 5 834 | 34,738 | 2,489,480 |
| South Suburban ..... | 1894 | 500 | 3,079 | 28,168 | 782,058 |
| Newport ..... | 1900 | 300 | 462 | 2,191 | 308,780 |
| Chester ..... | 1101 | 73 | 294 | 1,158 | 181,414 |

It may be said that gas undertakings are protected by Act of Parliament from competition with other gas producers, that the gas industry has a long period of certain prosperity before it, and that such profit-sharing schemes cannot be applied to private enterprises in which competition is very keen and profits very variable. It is quite true that there is more difficulty in elevating the employees of private firms into the position of capitalists and copartners, but the reports of the Labour Co-partnership Association show that schemes which enable the employees slowly to accumulate capital in the enterprises for which they labour have been successfully in operation for some years in the works of Sir W. G. Armstrong, Whitworth, & Co., Ltd., and in other important factories.

Reviewing all the work which has been done with the object of making labour more interesting than a mere wage-earning operation, we think it must be conceded that the greatest measure of success has been attained by profit-sharing accompanied by compulsory investment of the profits in the concern for which the operative labours, or in some form of Government security, and not by what are known as co-operative societies. In such societies shareholders who are energetic and honest, but who are quite unfit to control an industrial or commercial business, are too often allowed to exert a preponderating influence in the working of the society.

The average operative is not yet fit to be entrusted with authority equal to that acquired by masters of industry or merchant princes in the supervision of the operations which bring food and wealth to the community. He still requires a master and adviser. He must learn many things before he can be regarded as qualified to occupy a position of control; but Sir George Livesey has given to the world a practical demonstration on a large scale of the methods by which operatives of all classes may be induced to take a lively interest in their own work and in that of their fellow workers, and by which, as a result of their own labour, they may pass into the ranks of capitalists. Truly, a notable achievement.

## NOTES.

**The Vienna Conference.** WE may draw the attention of our readers to the very full report of the Architectural Conference at Vienna which is concluded in this issue, and also to the importance of some of the subjects discussed there and the serious and able character of the discussions. Those on the subjects of Architectural Copyright, International Competitions, and Ferro-Concrete merit the serious attention of our professional readers.

**Practical Experiments in Steel.** THIS is the title of a suggestive paper read before the Franklin Institute by Mr. Charles L. Huston. The experiments described by the author indicate that the specimens of steel plate available for testing purposes represent the softest part of the metal. Hence there is in the body of the plate much harder material, at least in the case of heavy plates, and in any event a much greater variation than is generally believed. Accepting this view, it is obvious that if steel is required to be of high tensile strength, and if tensile strength is gauged solely by samples taken from the softest part of the plate, the bulk of the material may be so hard as to suffer injury in working, thereby reducing the factor of safety unknown to the designer of the finished structure. Mr. Huston makes the reasonable contention that it would be well to encourage the use of soft ductile metal, capable of being worked with less risk of developing weakness and more reliable than harder metal of the same substance. In short, Mr. Huston would introduce ductility as a direct factor in conjunction with tensile strength for the determination of permissible working stresses. The rules suggested in the paper are applicable only to material to be used in tension. For metal to be subjected to compression and bending a different method of treatment would necessarily have to be adopted.

**The Shrinkage of Timber.** WE have often alluded to the valuable series of investigations undertaken in the interests of traders and professional men by various departments of the United States Government. A very interesting set of experiments recently concluded at Yale University by the Forest Service relates to the shrinkage of timber in consequence of the loss of water during the process of drying. These experiments show that green timber exhibits no shrinkage until the amount of occluded moisture has been reduced to about one-third the weight of the dry timber. Thenceforward the shrinkage appears to be in direct proportion to the amount of water abstracted. Shrinkage in a direction parallel to the grain is so small as compared with the shrinkage at right angles to the grain that it may be neglected without sensible error in computing the total reduction of volume. The Report issued by the Forest Service gives the volumetric shrinkage of various classes of timber, the proportion ranging from about 7 per cent. for red cedar to 26 per cent. for blue gum eucalyptus, the criterion in each case being the dry volume of the wood. It should be noted that in the usual air dry state from 12 per cent. to 15 per cent. of moisture remains. Therefore, shrinkage from the green to the air dry condition may be taken as being little more than half that occurring between the green and the absolutely dry state.

**Practical Results in Forestry.** AT a recent sitting of the Royal Commission now engaged in the question of afforestation, the forester to Lord Lovat gave some valuable particulars concerning the woods under his charge. It appears that the estates include some 8,300 acres of planted woodlands and about 1,500 acres wooded by natural growth, and that from 70 to 100 acres of land are planted annually. The witness mentioned that he had planted about 500 acres of land not worth more than 1s. an acre for agricultural purposes, but which, he estimates, will acquire the value of 90*l.* an acre as woodlands in seventy years' time. That is a satisfactory prospect for the owner, and the opinion expressed should encourage other landlords in the pursuit of forestry. Another important point is that Lord Lovat's woods find employment for fifty men, representing a wages-sheet of 1,500*l.* a year, and that the timber merchant who buys the wood pays about 2,000*l.* a year in wages in respect of the same timber. If the cultivation of trees were generally practised in suitable places throughout the country there would be a large opening for labour, bringing numbers of men back to the land and materially reducing the ranks of the unemployed.

**The Proposed New Thames Conservancy.** A NOTE of warning concerning the constitution of the new Thames Conservancy Board suggested in the Port of London Bill is sounded by the Upper Thames Public Rights Protection Committee. London, naturally, has much interest in the river as a place of recreation and as the main source of water supply. Hence the metropolis ought to be strongly represented on the new board. But, as the Committee point out, the Bill proposes that six members should be nominated by the riparian counties whose interests are not those of the public at large, that seven other members shall be appointed by waterside towns where county influence is strong, and that London shall be represented by only two members nominated by the County Council and the Water Board respectively. Two nominees of the Port of London Authority and the Board of Trade are also contemplated, but cannot be looked upon as representatives of the metropolis. While recognising the justice of protecting the rights of riparian landowners, we should be sorry to see the new Conservancy Board constituted in such a way as to threaten the continuation and

reasonable extension of rights in a health resort of incalculable value to the millions who live and work in London.

Public Rights of Way.

THE Public Rights of Way Bill, which has been promoted by the Commons and Footpaths Preservation Society, seems to have something to be said for it. We have not the text of the Bill before us, but, according to the statements made in the House of Commons at its second reading, its object is to enable proof of user or dedication to be made with greater certainty. In the case of estates tied up for lives by settlement, or mortgaged, some legal difficulties have been experienced in proving such rights since the Courts have sometimes held that they cannot be acquired by user unless the legal estate was vested in some person capable of protecting it and granting rights. It is common knowledge that, although rights of way are capable of abuse, yet the amenities of the country districts have of late been much destroyed by the loss of well-known and valuable rights of way. This state of things has rather increased than diminished since the district councils have been entrusted with the defence of rights of way. These bodies very naturally hesitate to embark on litigation, somewhat hazardous in its nature, out of the rates, and one unsuccessful action has sometimes resulted in landowners in the district being permitted to close other rights of way with impunity. Direct supervision of these rights of way and protection of those well defined is much needed, as what is everybody's business is, in practice, that of no one, and in many districts the public are more and more getting restricted to roads which are rendered unsuited to pedestrians by increasing motor traffic.

Chalfont Park, Bucks.

THE announcement of the approaching sale of Chalfont Park, in Buckinghamshire, recalls the fact that in the XVIIIth century it was one of the places frequented by Horace Walpole. It was then the property of his brother-in-law, General Churchill, and there is no doubt that Horace Walpole's advice was given in regard to the alteration of the house. There is still a considerable appearance about the building of the Strawberry Hill Gothic. Chalfont Park is only some twenty miles from London, and the opening of the Great Central Railway two years ago has brought the district in which Chalfont Park lies within the reach of Londoners. Some three miles distant is another house which is well known in connexion with politics and letters in the XVIIIth century, Bulstrode Park, then the property of the Duke of Portland. Of it much may be read in Mrs. Delany's letters.

The Late Sir John Evans.

THE death of Sir John Evans, at what might be called in the usual phrase "the advanced age of eighty-five," only that he never seemed to be of "advanced age," removes from among us one who was a much more remarkable and exceptional man than the public generally were probably aware of. For Sir John Evans's reputation—or rather we might say his reputations, for he had several separate ones—lay more among the learned than with the crowd. He was a successful and very business-like manager of a great paper-manufacturing firm, a fact which many of those who knew him chiefly as one of the most learned archæologists of the day probably hardly realised. He was a *savant* of special acquirements in the subjects of Numismatics and of prehistoric archæology, combining with this a general interest in archæology in all its branches. He was a learned geologist, and he brought his geological knowledge to a practical purpose in connexion with the subject of water-supply. He combined classical scholarship with a colloquial familiarity with modern languages; and with all this learning he combined social gifts and a charm of manner which must have impressed all who met him, while his energy and youthful vivacity seemed inexhaustible. Merely to cite the list of societies over which he had at one time or another presided is enough to give an idea of his extraordinary versatility of acquirement, since learned societies do not elect any one as President without a solid basis for the choice. He had been, successively or simultaneously, President of the Numismatic Society, of the Geological Society, of the Society of Antiquaries, of the Anthropological Institute, of the Institute of Chemical Industry, and of the Paper Manufacturers' Association, besides being High Sheriff of his County and a Chairman of Quarter Sessions, and a Trustee of the British Museum. And with all this he was a man who thoroughly enjoyed life in a social sense, and contributed to the enjoyment of others. It is a most wonderful career, and his death seems to leave a gap almost everywhere.

## THE EIGHTH INTERNATIONAL CONGRESS OF ARCHITECTS, VIENNA, 1908 (*concluded*).

*Subject II.—Architectural Copyright and Ownership of Drawings.*

HERR BAURATH EMIL BRESSLER (Vienna) read some extracts from the papers sent in, and requested the meeting to signify their approval of the resolution submitted by M. Georges Harmand (Paris). The three papers on this subject express either personal philosophical opinions concerning the advantage of such copyright or, like the excellent German paper, are reviews of existing laws.

The French and Spanish papers presented by M. Gaston Trélat (Paris) and Señor P. Salvat (Barcelona) belong to the first category, and are not of a positive nature.

M. Trélat refers to his paper read at the seventh Congress in London, in which he states that artistic copyright is not so much a question of legal right, as a moral one. He recalls an excerpt of thirty years ago in which Lefuel and his own father, Emil Trélat, expressed the same opinion, and he comes to the following conclusion:—The eighth International Congress of Architects in Vienna should, for the present, leave open the question of "Architectural Copyright and the Ownership of Drawings" until a unanimous opinion be arrived at.

Señor P. Salvat, in his paper, treats this question, like M. Trélat, with very clever and apposite arguments. He disapproves of the attempts of M. Harmand, the Parisian legal adviser to the "Comité Permanent," who asserts that the copyright of works of art merely refers to the artistic building as being the plastic reproduction of the ideas and drawings of the architect. According to this view, only the original building created by an architect is to be considered as a true work of art.* Señor Salvat comes to the following conclusions, which he places before the Congress for deliberation:—

"1. A distinction should be made between the architect's design and the building itself.

2. The design should be as fully protected by copyright as are the works of painter and sculptor.

3. The architectural building to be protected by copyright must be the object of a special study and the various rights must be taken into account."

Regierungsbaumeister Bothke (Berlin), in his paper, gives, in a clear and lucid manner, not only his own deductions and opinions, but he announces also the success of the German law operative since July 1, 1907, a law which includes architectural work in its copyright. In the terms of this Act, only such buildings as possess artistic merit are protected; to the exclusion of purely utilitarian buildings. The purport of copyright is, that imitations and copies, etc., may be forbidden, that permission shall be on reciprocal terms, and, finally, that a breach of copyright is punishable, and entitles to a claim for damages. The one proposal to which this report gives rise is as follows:—If this Congress is to attain any success, then it should take the German law of June 9, 1907, as a model, and endeavour to induce all those States who are not so protected to bring the question before their respective Parliaments.†

M. Harmand's resolution read as follows:—

"The eighth International Congress of Architects, Vienna, 1908, remembering on the one hand the resolutions on copyright proposed during the last thirty years at various International Congresses of Architects, or of Literary and Artistic Associations (particularly those of Madrid, 1904, and London, 1906), and on the other hand remembering the Final Protocol of the Diplomatic Conference held in Paris, 1896, where the principle of full copyright for architecture was recognised; remembering finally the English Acts of 1766 and 1862, the Spanish law of 1879, the French law of 1902, and the German law of 1907, each of which expressly protects architectural works:

This Congress is of opinion:

1. That it is the complete set of drawings (comprising the drawings of the external and internal façades, plans, sections, elevations, and decoration drawings) which constitutes the first manifestation of the architect's idea, a complete work of itself;

2. That the building is only a reproduction on *terra firma* of the architectural design.

The Congress therefore adopts this resolution:

That the architectural design and all the drawings which compose it, together or separately, be protected by all Governments, and by all International Conventions, in exactly the same fashion as is the case with other artistic work."‡

Herr Baurath Bressler continued:—These principles are set forth in the French law of 1902, and it is highly desirable that the Congress should subscribe to them. Those States which do not enjoy similar protection must endeavour to obtain it on the basis of the French Act.

M. Harmand also spoke at considerable length. He pointed out the extreme importance of the subject, especially to Austria: As Austria did not subscribe to the Berne Convention, her subjects have no copyright in other countries. If they want to secure this they have to publish their work in a foreign country. In this fashion, Austrians can secure for themselves advantages which are unattainable in their own land. Enlarging on the resolution he had drawn up, M. Harmand emphasised his point by comparisons with other arts which are already fully protected. He said that a set of drawings constituted a whole artistic work, just as a musical score is complete in itself. Why, therefore, should not both works enjoy the same copyright? The work of a

* Either Señor Salvat or his German editor seems to be under some misapprehension of M. Harmand's views.—ED.

† A *résumé* of the new German copyright laws has already appeared in our columns.—ED.

‡ See Report on London Congress of 1906, pp. 134-153.

composer is only finally realised when his score is performed by an orchestra; but for every public performance the composer receives his royalty, and his score cannot be used (in public) without his permission. He therefore urged the Congress and all other architectural bodies to continue their endeavours to obtain full ocpyright—it is only by constant repetition of the same demand that anything is obtained from Government. He specially pointed out that legislation must make no difference between the design as illustrated in drawings and the design as carried out in the building. M. Harmand gave some striking illustrations of this appreciation of copyright in France. Gérôme had painted a picture representing a Louis XIV. scene with a daylight effect. After crossing the Atlantic, the picture returned later to France, and one day M. Gérôme saw it in a shop window. At first he did not recognise his own work, for the sunlight effect had been mysteriously transferred into moonlight. M. Gérôme invoked the aid of the law, and the case went against the dealer, even though it could not be proved that he personally had had anything to do with the mutilation of the picture. The Court decreed that he must have the sunlight effect restored, or, failing this, the picture must retire from his window to some remote corner of the shop. The picture was not seen again! Similarly a sculptor executed a figure of "Summer," the bare feet of the girl resting on bare earth. At a subsequent exhibition what was his astonishment to see that his bare earth had been changed into a carpet of rose blossoms! Here again was decreed the summary removal of the marble from the exhibition. Again in Belgium, an architect had placed his signature on a building. The stone was removed when some alteration was being effected. On the appeal of the architect the owner was condemned to replace the stone in its original position, or, failing that, to have the architect's signature cut in some position chosen by the architect himself. M. Harmand considers that it should become the rule for architects to sign their buildings. Every painter and sculptor signs his work—and the name of a composer is never absent from a printed programme. Why, therefore, should the public not be able equally easily to learn who designed a building that pleases them? In fact, the probability is that the sight of signatures on buildings, as visible as those on paintings and statues, will encourage the public to include the architect among his category of "artists." Designs for applied art are fully protected in many countries. Why should an architect's design in brick or stone not enjoy the same copyright as a design of his in glass or silk? Wherever personality is shown in a design it should be protected by copyright. In most cases it is true that the design for a house is not suited for more than one reproduction, yet it sometimes happens that the same design can be repeated with no disadvantage.

An essential principle is that the drawings remain the property of the architect, they being only the concrete expression of his abstract idea. "We cannot repeat too often that the building is only the embodiment of the design."

M. Harmand expressed his opinion on sundry other Acts, suggesting that the Hungarian law should be modified, and congratulating the Germans on the advance obtained in their law of 1907.

As a further example of French procedure, he quoted the case of some newspaper offices built by Dolfère. The pediment is decorated with a heroic-sized head, the wide-open mouth of which proclaims the news to the world. A man of few ideas inappropriately copied the wide-mouthed head on a block of flats. The court condemned him to modify entirely the features of his too-closely-imitated head!

The speaker again and again insisted that the drawings remain the property of the architect; only tracings are given to the client, therefore the architect retains his copyright.

In the Convention of 1896 the clauses on artistic and literary copyright were signed by a dozen or more countries, including Germany, Belgium, Denmark, France, England, Norway, Sweden, Luxemburg, Spain, etc.—in fact, by most cultured countries except the United States, Austria, and Russia. According to this Convention, authors, painters, sculptors, and architects who have secured copyright in their own country are thereby protected in all other countries signatory to the Convention. Each country gives the artist the same protection as he enjoys in his own country. It is to be noted, however, that details differ in the various countries, especially as regards the duration of copyright after death. According to the Berne Convention, copyright continues in France and Belgium for fifty years after the death of the artist or author; and anyone wanting to secure this long copyright can obtain it by publishing his work in either of the countries named, irrespective of his own nationality.

M. Daumet (Paris) rose to express his agreement with M. Harmand's words. He further said that if we want to obtain copyright from Government we must not be less careful in observing copyright among ourselves. He gave a very illuminating example of his meaning by his mention of a house in the rue Tronchet, Paris. Sites in this street have trebled in value since a charming little house was built here by Duban. Now Duban was the greatly-honoured restorer of the Château of Blois, and he designed admirable additions to the Ecole des Beax-Arts, while the Galerie Charles IX., the finest modern part of the Louvre, contains some of his best work. The present owner of the Duban house in the rue Tronchet wished to enlarge the building by adding a story to it; but such is the esteem in which Duban is held that no French architect could be found willing to mutilate Duban's design. M. Daumet maintains that one cannot touch a man's building without his own consent.*

The Roumanian delegate, M. Berindey, and Baurath Wielemans (Vienna) both warmly supported M. Harmand's resolution, which had been received with acclamation by the meeting. In his summing-up, the Chairman said that both he and Signor Cannizzaro (Hon. Chairman) intended to bring M. Harmand's proposal before their Governments.

M. Harmand urged all architectural bodies to thresh out the subject of copyright during the next few weeks. Thus each Government can be supplied with definite suggestions for the copyright desired by architects, at the International Convention which is to meet in Paris next October.

*Subject III.—Rules and Regulations for International Competitions.*

Herr Weber said there could be no doubt that international competitions have a favourable influence on the art of all nations, and that, through them, both art and artists of all countries are drawn more closely together. Among other instances, this was the case with the International Competition for the Rathaus (Guildhall) of Vienna. In more recent times the Peace Palace at the Hague has renewed the discussion of the regulation of international competitions. It is especially desirable that a minimum of drawings shall be required. The personality of the artist is gradually becoming a matter of greater importance. Beauty united with utility gives us to-day that decisive factor which was called "style" in former civilisations.

The following suggestions were made relative to international competitions:—

1. International competitions for subjects of international importance are desirable in the interest of the art of all nations.

2. Architects of all countries represented in the Permanent Committee of the International Congress may take part in such competitions.

3. All countries shall contribute an equal number of members to the jury. The jury shall act in the interests of art, and they shall choose that design which is the most suitable for the country and the site.

4. The jury shall consist of eminent architects who are fitted for the responsible duty, and they shall form two-thirds of the jury.

5. The jury shall be suitably indemnified.

6. When possible international competitions to be in two sections. In the open competition the artistic qualities of a design can come to the fore with a minimum of drawings. In the limited competition the drawings can be more complete and thus show more technical knowledge and artistic ability. No premiums to be awarded in the open competition, but all designs in the limited competition to be premiated.

7. The first prize shall carry with it the execution of the design.

8. Special principles shall regulate these seven main principles.

Herr Weber then quoted the excellent suggestions for the regulation of international competition put forward by M. Trelát.

Baurat Neher, of Frankfort, considered that Herr Weber's original propositions made a good basis on which to draw up more detailed rules. He said that some German Societies of Architects have been drawing up rules for the regulation of competitions. He agreed heartily with the sentiments expressed by M. Guadet at the last Congress in London, and added that nowhere had he seen any formula of rules more comprehensive or more tersely expressed than in the paper drawn up by the Dutch Architectural Society, "Ars et Amicitiæ," and published both in our own number of July, 1906, and in the Report of the Seventh International Congress of Architects. Baurat Neher had, however, one suggestion to make, viz., that the "Ars et Amicitiæ" article 4 should be replaced by Guadet No. 8. Let the conditions of the competition be sent out in the language of the country instituting the competition, and let the competitors have translations made for themselves. Guadet quoted the example of the San Francisco competition. The conditions were drawn up in French; later on they were retranslated from English into French, and so garbled that the man who drew them up did not recognise the work ascribed to him. The Spaniards suggest that conditions drawn up in any other language shall be accompanied by an official French translation. M. Guadet proposes that the jury shall consist only of architects.

Herr Weber (Vienna) further gave extracts from the summary of principles which had been accepted by the Competitions Committee of the Austrian Society of Engineers and Architects:—

1. *The aim of architectural competitions* is to obtain ideas, sketches, or designs. In no case are highly finished drawings to be demanded.

2. *Nature of the competition.*—International competitions are either only open or an open preliminary competition is followed by a limited competition.

3. *Choice of the jury.*—As first step in instituting a competition, the investigator shall obtain the services of a jury, in order to have their help in drawing up the programme and in carrying out the arrangements.

4. *The opening and carrying through of the competition.*—The conditions of the competition, written in the language of the country, shall contain the following principal headings: (*a*) the name of the promoter; (*b*) the composition of the jury; (*c*) the programme; (*d*) the procedure of the jury. No alteration of the conditions will be allowed during the competition:—

(*a*) *Name of promoter.*—Besides other desiderata the conditions must contain a clause which guarantees that the promoter is a plenipotentiary.

(*b*) *Composition of the jury.*—The jury must consist of an uneven number in proportion to the importance of the occasion. At least two-thirds of the jury shall be architects. If the promoter have already drawn up the conditions of the competition, they must be examined by and approved of the entire jury. Should the jury not be unanimous they shall refuse to act. The members of the jury shall be named in the conditions and receive adequate remuneration.

* We need hardly point out the bearing of this on the recent proposal to interfere with the original architect's work at the Tate Gallery.—ED.

(c) *The programme.*—The programme shall give particulars of:

1. The place and date for sending in the competition drawings.
2. The site.
3. The requirements.
4. The style.
5. The number and kind of plans, calculations, and other details required.
6. The estimates.
7. The device for recognising the drawings.
8. The ownership of the design sent up for competition.
9. The figure and number of the prizes.
10. The purchase of unpremiated designs.
11. The obligation of distributing the prizes and of buying non-premiated designs.
12. The distribution of the prizes.
13. The choice of design to be carried out.
14. The exhibition of the competitive designs.
15. The return of the designs.
16. The decision of the jury.
17. The adherence to the conditions of the promoter and the cost of the proceedings, and furthermore in the case of "an open competition followed by a limited competition."
18. The number of the designs to be chosen for the limited competition.
19. The remuneration for the chosen design, and
20. The value and number of the prizes for the limited competition.

(d) *Procedure of the jury:*

1. Taking over the drawings.
2. Preliminary examination.
3. Elimination of unsuitable designs.
4. Final examination of designs and award of prizes.
5. Opening of the envelopes which contain the names of competitors.
6. Verdict of the jury on the choice of the design to be executed.

The above are only headings; the summary further goes thoroughly into the details of each clause.

Baurat Neher also quoted some of the German propositions. Some wish that the jury should be appointed by the Committee which institutes the competition; others that the jury should be chosen by the competitors; this latter is also M. Guadet's opinion. Herr Bruno Schmidt considers that half the jury should be chosen by the Committee and half by the competitors; that the jury shall consist of not more than seven members, chosen by the Committee, who shall signify their approval of the conditions by appending their signatures thereto, and that the rest shall be chosen by the competitors.

M. Poupinel (Paris) announced that M. Rey (Paris) had sent in a long paper which there was no time to read. He said that the rule providing that the jury have nothing to do with the execution of the works is so evident as not to need enunciation. Various French architectural societies have discussed the subject and have at length arrived at an agreement as to the general principles, but no definite rules have as yet been published. M. Poupinel quoted some of the main principles, and announced that during the week the Comité Permanent would occupy itself with thrashing out the subject, and that on the last day of the Congress he would announce the conclusion which had been arrived at.

At the meeting of the Permanent Sub-Committee on Public Competitions, on May 21, M. Poupinel, secretary to the Committee, read out the articles which had been accepted, and those which had been held over at the sitting of May 19, 1908.

Signor Cannizzaro read a new draft embodying those ideas which had been accepted at the preceding sitting and offering a solution for those which had been held over. After some discussion, the Committee accepted the wording of the following principles:—

*Resolutions to be presented for ratification by the International Congress, Vienna, May 23, 1908.*

The eighth International Congress of Architects is of opinion that:

In *International Architectural Competitions* the following points should be considered:—

1. International competitions should be reserved for exceptional cases which bear a truly international character.
2. International competitions may be open to all architects without invitation, or limited and by invitation. Limited competitions to be in one division only; open competitions preferably in two divisions.
3. The conditions of international competitions to be the same for all competitors. No account to be taken of any drawing or item which is sent in over and above those prescribed in the conditions.
4. The programme is to express in precise terms the conditions of the competition; it should not include any optional desiderata.
5. In limited competitions the programme may be drawn up in great detail, and demand a complete set of working drawings.

In open competitions the programme should express technical requirements in general terms, and limit the number and scale of drawings to the minimum necessary for the understanding of the design by the jury. The programme should announce that designs are to be anonymous and distinguished only by a device for the first division, and signed for the second.

6. In competitions of two divisions the first division will submit to the conditions of open competitions, the second division to those of limited competitions. Only authors of premiated designs to be admitted to the second competition.
7. The programme of the competition to be published and to be available for competitors on the same date in all countries. The date of sending in to be attested by the stamp of the forwarding office, which stamp must be handed in to the jury; this date will be considered as the final date for the closing of the competition.
8. The programme to be drawn up in one language only of the four official languages of the International Congresses of 1906 (London) and 1908 (Vienna), German, English, French, or Italian. Architects of experience to be consulted as to its drawing up.
9. The jury of an international architectural competition is to consist of seven architects, all of different nationality, and one member of the jury shall come from the country instituting the competition. A magistrate chosen by the administration which instituted the competition to preside without a vote at all meetings, so as to ensure regular procedure.

The members of the jury, by the mere fact of accepting the post, declare that they have not, nor will they have, directly or indirectly, any material interest in the execution of the competition work.

10. It would be desirable in international competitions, and especially in the preliminary competitions, not to prescribe any definite limit to the cost, so as to leave the competitors the greatest liberty in their design.
11. The total amount of the prizes to be distributed to be at least double the fees which would have been paid to an architect for preparing a similar design.

The execution of the design to be entrusted to the premiated architect under the conditions obtaining in the country which institutes the competition.

The amount of the premium not to be deducted from the fees.

In case the individual or the corporation which opens the competition wishes to reserve the right of dispensing with the services of the architect who was placed first, the programme is to contain an indemnity clause.

In the event of the building not being carried out an indemnity shall be due.

In every case the authors of designs preserve the artistic ownership of their drawings and the building erected therefrom.

12. In competitions of one division, all designs to be exhibited in a suitable place and for such a period as to enable all competitors to visit this exhibition, which must be announced beforehand in professional publications.

In competitions of two divisions, there will be no exhibition after the first assessment; all the sketches should be sealed and exhibited at the same time as are the final competitive designs.

The report of the jury to be published before the opening of the exhibition, in order that all those interested may be acquainted with it.

(Signed) J. M. POUPINEL,
*Secretary.*

The above resolutions were read out at a general meeting and received with acclamation. The Spaniards present took exception to clause 8, and requested that Spanish be added to the list of official languages. M. Daumet said that this objection would receive consideration at the next sitting of the Comité Permanent, to be held in Paris, November, 1908.

### *Legal Qualification and Government Certifying of Architects.*

Oberbaurath Baumann (Vienna), in his paper on the registration of architects, suggested it would be unfair to deny men of tried ability the title of "architect" merely because they had not passed through a certain course of studies and obtained a diploma. On the other hand, the title "architect" should not be granted till the individual had practised for a specific number of years, had proved himself capable of superintending building operations, and belonged to an architectural society. He said that in St. Louis (America) the architect held a higher position than in Austria, and that no contractor or artisan would work for a man who did not belong to a society of architects.

M. Chastel (Paris) defined a diploma as a certificate of necessary knowledge. He said that the anti-registrationists brought forward two arguments; first, that architecture is a liberal profession and that the granting of diplomas would close it; second, that diplomas requiring a minimum of work would discourage further study. Neither of these arguments hold good. The number of diplomas being unlimited, the profession would be open to all; and as for discouraging study, no man can afford to be behind the times, and in self-defence must study to his life's end. He suggested that diplomas should be granted by recognised teaching bodies and ratified by the State.

Professor Haup (Hanover) said that in order to protect themselves a society had been formed in Germany called the Society of German Architects, which awarded diplomas and numbered at present about 500. As an illustration of the abuse of the name "architect," he quoted the firm of Boswau & Knauer, Berlin, formerly gypsum and coal merchants respectively, who had eighty architects in their employ and who signed the buildings, designed by their architects, with their own names. At length proceedings were instituted against the firm. The defendants were fined, and henceforward forbidden to style themselves "architects."

M. Bonnier (Paris) said that in 1867 the French Government first issued diplomas in order to identify those architects who had studied at the Ecole Nationale des Beaux-Arts. These registered architects number at present 800. He held that only one body should have the awarding of diplomas in order to maintain a uniform standard of training.

Dr. Hönigsmann (Vienna) thought it time that architects and engineers should cease to be regarded as one body. He held that if legislated for indiscriminately a great deal of unfairness to the architects would result.

A new society had lately been founded, numbering at present 120, called the Central Society of Austrian Architects, which corresponds to the French and German societies of architects holding diplomas. It was suggested that, although the question is not an international one, but must be provided for by each country, yet the unanimous demand of 1,000 architects of all nationalities for registration might move Governments to action.

### *The Preservation of Ancient Buildings.*

Previous to reading his own paper, Oberbaurat Professor Julius Deininger (Vienna) read a *résumé* of papers written by M. A. Besnard (Paris), M. Gaston Trélat (Paris), and Herr Baurat Wurm (Vienna).

M. Besnard sent in a highly instructive paper which had received the approval of the Council of the Société Centrale des Architectes Français. In it he gives a most useful account of the laws relating to the protection of artistic and historical monuments in the various countries of Europe. He deals at length with the laws of France and Italy. He reviews the resolutions passed by previous architectural Congresses, and closes with an enumeration of the most important considerations which should regulate the preservation of ancient buildings.

M. Besnard considers it particularly important that:—

1. Governments should assign powers of expropriation for the protection of buildings in private hands.

2. That no alteration shall be undertaken in historical and artistic monuments without the consent and supervision of the commission for the preservation of ancient buildings.

3. That where new streets and building lines are contemplated great consideration shall be given to existing monuments and particularly with reference to their artistic effect.

4. That when it is impossible to save a building, this shall be carefully photographed, measured, and described, and that its artistic detail be preserved in a local museum.

5. That all buildings shall when possible revert to their original use and measures be taken to facilitate this.

6. That advertisements shall be forbidden on or in the neighbourhood of ancient buildings.

7. That inventories on an approved system shall be made of all ancient buildings.

8. That for all necessary restorations a programme shall be drawn up by men of repute and careful drawings made of the original condition of the building.

9. That Government shall make such provision in schools that children may early have their historical and artistic faculties aroused, and that those private societies which pursue such aims shall receive every encouragement, as shall also the publication of monographs.

*Protection of Ancient Monuments.*

Stadtbaudirector von Brünn put forward definite proposals for the organisation of the Protection of Ancient Monuments, under which title he would include not only buildings, but also other art treasures.

Dr. Kellner, on this subject, brought forward the following proposals :—

1. The establishment of an office for surveying ancient buildings with different officers for State, urban, and district matters, who will deal with objects according as they are of wide public interest or of a restricted local interest.

2. The creation of an authoritative centre for the preservation of ancient buildings and art treasures in the form of an independent section of a ministry, and the appointment of referees for town and local councils. These bodies would have definite districts which they would inspect, write reports on, and make proposals for; and the final decision would lie with the head office, which would provide the necessary funds. The funds would be obtained in due proportion from the State, the county and the local councils.

3. The Treasury and the County Council should advance the money to purchase desirable ancient buildings in private hands.

M. Gaston Trélat (Paris) says that it often happens that even eminent authorities, when making necessary restorations in ancient monuments, act most injudiciously. That often, even by the accurate restoration of single parts, the picturesque effect of the whole is grievously disturbed. Hence it is particularly desirable that special attention be paid to the artistic harmony of the general effect.

M. Trélat makes the following suggestions :—

1. Make a complete catalogue of all ancient buildings.

2. Make workable schemes for their preservation.

3. Keep these projects up to date.

4. Put up models in relief on the spot, so as to judge beforehand of the artistic effect.

5. Make a continuous series of studies for the further preservation of ancient buildings.

Herr Baurat Alois Wurm (Vienna) points out that particularly, in recent times, much damage has been done through a striving after "purity of style"; and that this removal of features of a later date has really been a crime against the spirit of pious preservation, and against the beauty and picturesque effect of the building in question. Baurat Wurm then quotes examples of such vandalism taken from the town of Vienna. He also says, very significantly, that in the case of alterations and additions the point to be considered is not so much purity of style, but an accurate perception of proportion and harmony of line. Government and local councils could do much for the preservation of ancient buildings from mutilation and destruction by acquiring them and by turning them to suitable uses.

Existing committees would work even much more effectually if they could work in concert with a Ministry or other head office.

Turning to his own paper, Oberbaurat Deininger said :— . . . In the treatment of ancient buildings, whether they be in good condition, or already falling into disrepair, one principle is gradually gaining ground, viz., that they shall be preserved in as unaltered a condition as possible. . . .

To restore an old building to its presumed original condition was the prevalent idea during the second half of the last century. An aim which is now no longer considered desirable, but it is even regarded under certain circumstances as being actually reprehensible.

Opinions differ with regard to additions to so-called "living" monuments—additions which are often unavoidable. It is still an open question whether additions shall be in the style of the building (as is generally the case) or whether a different style shall be used. It is probable that the opinion will soon become general that such additions shall be quite free as to their details, and shall be carried out in the spirit of the times; but that as regards proportion and mass they shall unite in forming an artistic whole with the ancient building. A too close imitation of an old style will in future be considered as an inartistic copy, or even as a more or less successful forgery. . . .

At the beginnning of this year the Austrian Minister of Education outlined a proposed law for the preservation of ancient buildings. It was amended by the Central Commission for Artistic and Historical Monuments, and it is hoped that the Bill may soon be laid before both Houses of Parliament.

The clauses of this law are very comprehensive, and deserve on the whole the support of all those who take an interest in the preservation of ancient buildings :—

This draft lays down the following principles :—

1. All artistic and historical monuments dating from sixty years back are under the protection of the State.

2. Under the particular protection of the draft Bill come those artistic and historical monuments whose preservation is a matter of public interest, whether this interest be historical, educational, or artistic.

The Bill amplifies these principles under the following headings :—

1. *Monuments above ground :*
(*a*) Monuments of public interest either (1) fixed monuments; (2) removable monuments.
(*b*) Monuments not of public interest.
2. *Monuments below ground :*
(*a*) Discoveries.
(*b*) Excavations.
3. *Fines to be imposed.*
4. *Conclusions arrived at.*

These headings are very carefully worked out in the body of the Bill.

Oberbaurath Deininger concluded his paper with the words :—

The great technical achievements of our time have caused a hitherto undreamt of extension of means of communication and a corresponding change in relative values; from these causes arises a daily increasing danger which threatens ancient monuments. The requirements of traffic and the increased value of building sites are the greatest enemies of ancient buildings. They are only partially neutralised by the correspondingly increased value set on such treasures. It therefore appears obvious that we need not only the more or less active sympathy of such as prize them, but also we need the protection of the law, if we are not to lose these treasures, each unique of its kind.

I therefore propose the following resolution :—

"The Governments of all civilised countries are requested to take under their protection the artistic and historical monuments which exist in their land. To collect official data respecting such ancient buildings, etc., and to make laws and regulations for their protection."

M. Besnard (Paris) opened the discussion by quoting the resolution adopted by the London Congress of 1906. He recommended that town councils, etc., should be empowered to prevent private owners from demolishing ancient buildings of recognised values. That where new streets, etc., absolutely demand the demolition of such buildings measured drawings should be made, photographs should be taken, and accurate descriptions be written of any building so demolished. That no advertisements be allowed on or near any ancient building. That any necessary and unavoidable restoration shall be in accordance with prescribed regulation. That the greatest respect be paid to the original design, and that any addition be made to harmonise as far as possible. He laid special stress on the desirability of a more formal recognition of art in education. He said that it would be a great gain for art if school-children could be influenced and taught to have a respect for art, that Government should formally recognise the position of those private societies which work for the preservation of ancient buildings, and that special facilities should be afforded to such societies.

The speaker asked for a vote of sympathy from the meeting on behalf of efforts now being made for the protection of Mont Saint-Michel. This interesting monument is the object of world-wide pilgrimage, and its beauty is being threatened by dykes and other engineering works undertaken for the benefit of the surrounding country. An endeavour is being made to arrange that the dykes and other works shall stop at such a distance from Mont Saint Michel itself as shall prevent their interfering with the beauty and picturesque character of the spot.

The meeting signified their cordial sympathy with M. Besnard's suggestion, but the Chairman ruled that such a question was out of order as not being of international importance—a decision in which he was at least *verbally* wrong, for the preservation of such a picturesque spot, especially one which attracts visitors from all quarters of the globe, is most certainly a matter of international importance; and it was regretted that the Committee which is working for the protection of Mont Saint Michel should not have obtained the official support of the eighth International Congress in its sitting on the very question of the "Preservation of Ancient Buildings."

M. Ch. Nizet (Paris) said that he would like to draw the attention of the meeting to two countries in relation to the matter in hand: He wished to point out the excellent work now being done in Athens by M. Balanos, and to congratulate the Greek Government on their enlightened execution of such work. In this respect Turkey offers a striking contrast to Greece. Not only are no steps taken to preserve ancient buildings, but it is almost impossible to obtain a sight of them. Permission to view must be obtained through an Ambassador, and it is only the minority of travellers who are in a position to approach their Ambassador with such a request. M. Nizet proposed a resolution that steps should be taken to obtain from the Turkish Government greater facilities for visitors to inspect ancient buildings and interesting monuments. When the Turks realise the great interest taken by foreigners in their monuments they will, in course of time, take steps to preserve them.

Dr. B. Franta (Prague) then expressed the following opinions :—

It is apparent to all that the preservation of ancient buildings is a matter of public interest. This preservation is of great importance in the history of civilisation. It were not meet that future ages should solely have books and drawings to refer to—the monuments themselves should be there to testify to the standard of civilisation attained in past centuries.

The measures taken for the preservation of ancient buildings are a further proof of civilisation which should not be ignored by legislators. Unfortunately in Austria we have no laws for the protection of monuments. We have only local regulations of this nature embodied in the proposed by-laws for Lemberg, Dalmatia, Vienna, and Prague. Such measures should receive legal

support. For through the decay or destruction of monuments the clearest and simplest proof is lost of the cultured development of a town and of a nation, a proof which nothing else can supply.

Those towns which have zealously undertaken to preserve their ancient buildings have fully realised that the loss of these meant the loss of their own reputation for importance and beauty, and that the destruction of ancient buildings meant the alteration of their own individuality.

The possession of ancient buildings is a treasure which increases every year in value. The pious preservation of monuments forms a fertile, material source of wealth for the town and its inhabitants, a spring which will never run dry; for the preservation of the beautiful includes new buildings which, with time, will rank among the old. May architecture continue to develop along the lines of truth and nature, of progress and beauty.

The works we create will, in their turn, become monuments, and it will be the pious duty of future ages to preserve them also.

Let us strive to preserve that which already deserves the name "Ancient Monument." Every monument is the property of the whole civilised world, and those bodies who are taking steps to ensure their preservation should be regarded as co-workers in an important work of civilisation.

I therefore beg to submit:—

That the preservation of ancient buildings be regarded as a moral obligation on the part of public authorities.

That the Congress recognise the necessity of settling the question through an International Committee.

That the International Committee have the drawing up of the legislative measures relating to the preservation of ancient buildings.

That legislation in all countries be regulated on the principles laid down by the International Committee. The final wording of this resolution to be drawn up by the Comité Permanent.

The original resolution having been put by the Chairman, and passed by the meeting, M. Daumet said a few words, expressing his sympathy with such steps as shall in future be taken to ensure the protection of architectural treasures and to further the preservation of the monuments of bygone ages.

*Property and Liberty.*

Cav. R. Sasso (Naples) read a short paper on the relation which exists between property and liberty.

It consisted of a rapid review of the Articles 336-440 of the Italian Civil Code. It was interesting in that it showed one how restricted are the Italian rights in landed property. Landowners have apparently little more than surface rights—that is, the right of erecting houses on their own property, and excavating foundations for the same. The Government retains important subsoil rights, demanding royalties on minerals, salts, and treasure-trove. With regard to the latter the laws are still uncertain and equivocal. One article deals with an important economic question, *i.e.*, the right of the public to water. No landowner can deny his neighbour an adequate supply of water for drinking and irrigation purposes. Cav. Sasso instituted comparisons with numerous French laws dealing with the same subject—laws which range through many centuries, the first having been promulgated by Philippe le Long in 1321. Though many laws have been passed since that year, matters remain indecisive on certain points. Louis Philippe, however, fixed the personal right of the landed proprietor at the depth of 100 ft. below the surface. The lower levels are the property of the nation, and royalties have to be paid for the permission to excavate minerals, etc.

*Concerning Ferro-Concrete.*

In his paper on ferro-concrete, the engineer Fr. v. Emperger said that from earliest times the walls of lofty buildings had been strengthened with iron. In the iron bolt we may therefore see the starting-point of that construction which to-day has reached such perfection under the name of ferro-concrete.

This material gradually superseded its forerunner, steel, for it is not only more economical, but is more proof against fire and rust. The material was not accepted by all nations equally readily. It first developed in Central Europe and spread through France, South Germany, and Switzerland to Austria. But, oddly enough, those countries which had held out longest against the innovation, *i.e.*, North Germany and England, are now using it to a larger extent than any other country.

It was impossible, said the speaker, to trace the progress in individual countries, but he would mention the exhaustive report Herr Direktor Zöllner had written on the subject in Germany, and that of M. G. Trélat in France. He would, however, like to say a few words about the development in Austria. The centre of the movement was Vienna, where the various firms for ferro-concrete founded a society called "The Austrian Concrete Association." He further drew attention to the experiments made in 1891-93 by the Society of Austrian Engineers and Architects, which were almost exclusively supported by private means and were the first big series of experiments made in the whole world. Since then only experiments of a private nature had been undertaken, amongst which the speaker mentioned a series which he had personally conducted relative to columns and beams. These experiments were begun in 1901,. and have only just been completed and await the opinions of this Congress. He proposed making the rupture tests next day, and invited all to be present in the laboratory of the Technical School. One important result of these experiments had convinced him that it is possible by means of concrete so greatly to increase the strength of an iron column that its cost works out at two-thirds less than if iron alone had been used.

Although in 1890 Wayss constructed his first ferro-concrete beams in Vienna, it was only in 1900 that Hennebique, at the Paris Exhibition, showed how such beams could be built on a large scale and be extensively used. Now in Vienna it is never a question of using any other material for floors and ceilings in buildings of any importance; dwelling-houses, however, do not use it to any great extent.

The four principal questions in which the architects' help is required in order to arrive at a satisfactory solution of the treatment of ferro-concrete are:—

1. The economies of the building.
2. The stability and construction of the same.
3. Protection from fire, rust, weather, earthquakes, etc.
4. The architectural treatment of ferro-concrete.

The economic superiority of ferro-concrete over steel was the great incentive for its adoption and the main reason of its success; for it is only natural that, if by a certain method something better and cheaper can be produced, that method will most generally be adopted.

As to the stability of ferro-concrete, one has only to refer to the report on the subject by Herr Rutger, of Rotterdam, which describes all the accidents which have occurred in Holland. It is usually impossible to point to any one source of failure, as so many causes combine to produce an accident, but the author was in some cases able to ascribe failure directly to:—

1. Insufficient scantling.
2. Insufficiency of stirrups.
3. Defects in the concrete.
4. Variations of temperature.
5. Settling of foundations, or to
6. Chemical influences.

Accidents have ever been the real instructors in all important matters of construction. Only through accidents have iron and vaulting reached their present perfection in this art. And although ferro-concrete is no exception to the rule, yet in Austria accidents are surprisingly rare. In lands where the Latin tongues are spoken, however, and in North America, where building laws give the maximum of liberty, the largest number of accidents occur.

The speaker then gave a few examples which had been brought to his notice, as an expert, of the results ensuing on insufficient experience:—

1. Erecting very flat roofs without allowing for the horizontal thrust, which will overturn the supporting walls.
2. Building a horizontal roof tiebeam into the external walls without providing a sufficient load on the abutments. In this case the walls will be dragged inwards.
3. Carrying beams over a variety of supports which settle in different degrees, such as bricks bedded in mortar and ferro-concrete columns.
4. Defects in the construction.
5. Subsequent alterations of plan.
6. Superficial repairs made by the contractor in order to hide any small accident for which he would be responsible.

The element which gives the greatest trouble is cement. The contractor should use only the best quality and be thoroughly conversant with its properties, for even after taking every precaution surprises sometimes lie in wait, through its want of adhesion.

As to the third question, protection from destructive elements, ferro-concrete is unquestionably the material which offers the most successful resistance to all external influences.

The last, and for architects the most important, point is the architectural treatment of ferro-concrete. The interchange of ideas by so many nationalities on this subject should materially help in finding a solution to this problem in art.

The Chairman announced that M. Augustin Rey (Paris) has sent in an interesting and valuable paper on the Construction of Ferro-concrete, which is to be printed at length in the *Transactions*, but no *résumé* of the paper was available.

Herr. K. Zöllner (Charlottenburg) read an interesting paper in which he quoted the large sums which had been spent on making experiments with ferro-concrete in Germany, and mentioned some of the valuable lessons learnt from those experiments. He considered that the proportions of ferro-concrete construction are not necessarily too slender to produce a good architectural effect; that familiarity in handling ferro-concrete will give fine results, as witness the fine buildings already erected in Dresden and Munich, especially the Neue Anatomie, or Medical Schools, in the latter town.

M. Gaston Trélat's contribution on the same subject was then read. The writer was of opinion that ferro-concrete is a material which, thanks to its constituent parts, is peculiarly adapted to resist all strains, whether tension, compression, or cross. It allows of a degree of homogeneous construction hitherto unknown. While combining the resisting forces of iron with those of stone, it unites the mechanic advantages of heavy materials to the characteristics of materials of even resistance.

In construction it therefore plays an entirely new part due to its varied stability, for it combines in itself, without one exception, all the factors of resistance which the various members of our buildings require. It fulfils all the conditions of stability required by horizontal and vertical members. Hence a remarkable homogeneous method of construction obtains throughout the building.

In an iron construction, isolated supports, whether vertical or horizontal, do the work, and are emphasised in the design. In a ferro-concrete construction the weight is evenly distributed over the whole mass; there is no subdivision into bays or members, and consequently no need of emphasising particular parts by mouldings, etc.

If, however, play of light and shade may not be introduced into the design, artists of taste will find a substitute in colour, in enamelled ware, in vitrified tile, etc. This facing could easily be incorporated with the

construction, provided arrangements were made to fix it to the iron members of the material. It is only a question of time till ferro-concrete meets all artistic requirements.

As to hygiene, walls hung with tile are strongly to be recommended as being particularly weatherproof and easy of disinfection.

In conclusion, ferro-concrete is a material which offers every desirable facility, if used intelligently. It has elastic qualities, such as are owned by no other material, and its metal core seems to demand an artificial clothing which will fulfil the requirements of art and hygiene.

M. Istvan Medgyarzay (Budapest) also read a paper which included a short historical sketch of other architectural styles and the principles underlying them. A fine selection of lantern slides showed the very varied uses to which ferro-concrete can be turned. Churches, houses, and many other buildings were illustrated. Among the more interestings subjects were the bridge at Ulm, the roof of a railway platform at Nuremberg, and the Markt Halle at Breslau. With views of Hungarian architecture, M. Medgyarzay showed that his national style is a constructive wooden one, and that therefore its forms are peculiarly well adapted for being reproduced in ferro-concrete. This in contrast to the equally wooden, but less constructive style prevalent in Switzerland. Incidentally the slides showed peculiar forms of scaffolding which aroused the curiosity of those present.

Oberbaurath v. Wielemans (Vienna) read a paper in which he examined the forms which enable ferro-concrete to win for itself a place in monumental architecture, a position such that it need no longer be considered as a deceptive substitute for other materials when it is used for details such as roofs, vaults, columns, and beams. He says:—"We shall have special forms of our own, when we take into account the special properties of ferro-concrete." Ferro-concrete is produced in two ways—(1) by the use of moulds on the spot; (2) by the use of ferro-concrete slabs, moulded elsewhere and brought to the works ready for use.

1. When made of ferro-concrete in moulds on the spot, the shape of ceilings, columns, and buildings is dependent on the fact that only such forms can be produced as are attainable with comparative ease in the use of scaffolding and moulds.
2. It is when slabs are prepared in a workshop that the special adaptability of ferro-concrete is most important. The most delicate detail can be worked out when suitable moulds of plaster, wood, or metal are used.
3. Both methods can be used simultaneously when ready-made slabs are incorporated in the mass of the building.

Herr Wielemans illustrated his remarks with a number of lantern slides in which ceilings were predominant. Every possible section of ceiling was illustrated from the plainest to the richest, where heavy coffers were filled with slabs showing intricate raised plaster details. Some of these slabs were on view in the next room, slabs 4 ft. square in fine pieces. Some of Herr Wielemans's slides showed quite distinctive detail; especially one very pleasing one, in which the conventional capital (which generally cuts in half any long thin support extending through two stories) was replaced by a flowing ornament which was continued on the wall surface at either side, and connected wall and support in a very pleasing fashion.

Geh. Oberbaurath Oskar Launer (Berlin) read a most instructive paper on the methods to be adopted for the prevention of accidents. He spoke at length, but his seven main principles can be concisely stated:—

1. The study of ferro-concrete construction shall be obligatory in technical schools, and pupils shall gain experience by watching work in progress and also the carrying out of experiments.
2. Grown men engaged in active work shall be given the opportunity of gaining practical experience in ferro-concrete construction.
3. There shall be a number of specialists who can be consulted on the subject.
4. Less stress should be laid on low estimates, as scamping is especially dangerous in ferro-concrete work.
5. Ferro-concrete buildings in course of construction shall be carefully inspected by experts.
6. Complete accounts of every accident shall be published immediately after the occurence—without any waiting for the judicial inquiry.
7. According to a recent German law, (*a*) building operations can be stopped if incompetence is manifested on the works, or (*b*) if the builder be considered untrustworthy.

Mr. Sachs (London) seconded the proposal for the immediate publication of accounts of accidents which occurred. He pointed out that such experience gained from actual building operations was far more instructive than that derived from experiments in a workshop. He urged that municipal authorities should be required to exact a full report of the accident immediately after its occurrence. Mr. Sachs's words were warmly received, but the meeting was of opinion that the proposed measure should include for accidents of every description, and not be restricted to those arising only from ferro-concrete, the newest of all building materials. Further, that it would be desirable that the separate reports be collected and published in tabular form, for facility of reference.

*What Steps can be Taken to Secure a Greater Regard for Æsthetic Consideration in Engineering Works?*

This question was circulated by the Society of German Architects and Engineers among the various other similar societies in Germany. The opinions expressed by twenty of these associations are embodied in the following paper, read by Oberbaurat Klette, of Dresden. The speaker said that it was not any unfavourable condition of engineering which prompted this question, but the desire that the new impulse which has in the last few decades affected all branches of art, and particularly architecture, should also find expression in works of engineering.

Engineers have lately awakened to the fact that their works should be artistically conceived, and the results of this awakening are very promising. Former shortcomings in art are traceable not only to the low standard of culture at the period, but to the sudden and numerous demands made on technical skill, which thrust every other consideration aside. Two periods of bewildering activity stand out—the one when railways multiplied with extraordinary rapidity and overtaxed the resources of technical skill; the other, when, as a result of the revival of commerce, towns were invaded and awakened out of their long sleep. To meet the first emergency technical knowledge was centralised, and projects for bridges, railway stations, and street fronts dealt out, with no reference to surroundings or site.

In the second period also, circumstances proved stronger than the wishes and ability of the intelligent community. I refer here to the planning of cities, a science unknown thirty or forty years ago. In the most surprising manner and at haphazard, towns began to spread without any officials to advise or control the extension. Rapidity was demanded in the construction, rather than quality in the work, and there was netiher time nor inclination for æsthetic considerations. Unfortunately such buildings have outlived the purpose they served. They have founded a "School," and there still exist some authorities who, through sheer laziness or stupid conservatism, would rather perpetuate the style than introduce improvements. Fortunately others are of opinion that the æsthetic is a sign of civilisation, and that the necessity of beauty in works of engineering is as natural and imperative as in works of architecture.

Architecture has this advantage, however, that it has a past from which to draw inspiration, whereas engineering became an independent science only in the middle of last century. Its development, however, was so rapid that theory followed on practice, instead of the other way about. It is true that much was built that does not reach the standard required nowadays, but nevertheless its advance has been a sort of triumphal march.

The language spoken by the engineer was dry and insipid so long as he estimated the value of his work according to the minimum of material used; so long as he fashioned a skeleton and considered it unnecessary to give it beauty of form, or, at the best, asked an architect to overlay it with ornamentation. The architect looked on the skeleton as a necessary evil to be disguised as far as possible; the engineer looked on the ornament as a superfluity; consequently no happy result cauld be expected from such co-operation.

How, then, should works of engineering be dealt with in order to fulfil æsthetic requirements?

In answering this question we must except such works as do not force themselves on our notice and neither require nor admit of æsthetic treatment, such as canals, tunnels, machinery, etc. We must confine ourselves to such objects as are likely to attract attention and affect their environment.

First and foremost the works must fit in with their surroundings and look at home. This end is not difficult to attain in the country where a judicious selection of site, material, and style are the chief points. The landscape should be considered as far as is possible, and only interfered with when no other solution can be found.

It matters not whether the desired end be attained through the skill of one man or of many co-operating. Since specialising is a feature of modern times, the best results will be obtained by centralising these different branches of knowledge, that they may live in close touch with each other. Were it not for specialists, bridge-building, concrete, and ferro-concrete could not have attained the standard of excellence they to-day enjoy.

The report of the Hamburg Architects and Engineers' Society shows the way by which good results may be obtained. The two main principles laid down are that engineers should be trained to understand the artistic aims of modern times, and that architects should be familiar with the various branches of an engineer's work. In this way complete understanding would lead to mutual sympathy. The engineer would not wait till his project was complete to consult the architect on its artistic dress; he would submit his sketches and not insist on sacrificing every artistic consideration to practical claims. The artist, on the other hand, would have to treat the project intelligently, and not merely plaster it with ornament or do violence to its purely constructive features.

The difficulty lies in finding suitable men to train such engineers and architects; men who will inspire the students and not teach merely rule-of-thumb methods. The engineering curriculum should include a course on art, so that the eye might be trained to recognise beauty of form. The engineer would then be in a position to know what he is aiming at and be capable of expressing his aim to the architect, whose duty it would be to give form to the idea.

Furthermore, it would be desirable to awaken the interest of the public in these efforts after higher things, and to publish reports thereon not only in professional papers, but in those more widely read.

Another question raised is: How can influence be brought to bear on the artistic designing of private buildings in town and country? Stuttgart proposes to appoint a consulting body for architecture. Such bodies should be appointed in all towns, perhaps should be allied to the district council. The members, four architects, should be elected for certain periods, and at

regular meetings discuss all designs submitted for approval to the municipal authorities. They should be empowered to reject designs which fell short of the requisite standard of artistic merit, and their services should be remunerated.

All suggestions point towards the one object, *i.e.*, the necessity of obtaining æsthetic effect in all constructive works, and hence the need of making provision for the suitable training of our engineers.

Herr Emil Edler von Mecenseffy agreed in the main with the speaker, but contended that ships and machinery should not be excepted on the ground that they produce no æsthetic effect. He maintained that both steam-engines and ocean liners do produce a very strong æsthetic effect when their design is regulated by the practical requirements which they are called upon to fulfil. Why, therefore, should not other engineering works produce an equally satisfying effect from their obvious suitability of design? With regard to steam-engines, he pointed out that the development in design had been a rapid one, and the somewhat peculiar and arbitrary design of the older engines had been gradually modified until a much more practical machine had been evolved, which, by its very suitability, arouses our admiration. In works of a much more extensive nature progress is necessarily slower. Bridges, tunnels, and embankments have been built to endure, and the number of new ones required is so limited that there is comparatively small opportunity for improving on the designs of our predecessors.

*Excursions and Receptions.*

The social side of the Congress was an unqualified success, every kind of amusement being provided for the visitors. It opened with a reception and banquet given on Monday night by the Mayor and the City of Vienna, in the Guildhall, to about 1,400 guests. The Rathaus is a fine building in the Gothic style, built by Schmidt in 1873-83, which contains the Historical Museum of the City of Vienna and the Municipal Museum of Weapons, both collectins of the deepest interest. Each lady was presented with a bouquet of red and white flowers, bound with red and white ribands, the colours of the City, and each gentleman received, as a souvenir, a filled cigar-case, ornamented with the metal banner-bearer which crowns the Rathaus Tower. The toast of the evening was the Emperor Francis Joseph, who graciously consented to be patron of the Congress.

During the afternoon large numbers had visited the Imperial Library, built by Fischer von Erlsech in 1722. In the magnificent hall an exhibition of architectural designs by old masters had been arranged in honour of the Congress. Comparatively few out of the whole collection of 4,000 drawings could be on view, but some of these were priceless, bearing such signatures as Sangallo, Bramante, Bernini, Zucchero, Fischer von Erlach, etc. The hall, measuring 255 ft. by 54 ft., is lined with bookcases of unpolished walnut, with ormolu mountings, which work in most successfully with the brown-calf and gilt-tooled bindings of the books they contain.

On Tuesday evening several hundred free tickets were distributed by the management of the Royal and Imperial Opera and Theatre. Those members who were not so fortunate as to secure tickets spent a delightful evening at the Art Gallery, where a reception was held by the Vienna Artists' Association and the Architects' Club. The rooms were beautifully decorated with plants and flowers, and the walls hung with a fine collection of strong and interesting modern paintings which form the Jubilee Exhibition.

The same afternoon the Exhibition of International Architecture had been opened in the rooms of the Horticultural Society. Taken as a whole, the collection of drawings was exceedingly fine, though England was perhaps hardly as fully represented as the other nations, and such illustrations as were sent were mostly photographic. Italy perhaps adhered most strictly to the rule which specified that the exhibits were to consist of hand-drawn designs of buildings erected within the last ten years.

On Wednesday no business was transacted, and hundreds of members spent the day, from 8 in the morning till 10 at night, in an excursion to the lovely Semmering Pass, special trains being provided. Up till lunch-time the sun shone fiercely, and then the weather broke and a thunderstorm and torrential rain cleared the atmosphere.

On Thursday evening a Reception was held at Court for gentlemen only. Large numbers attended and were received by the Archduke Leopold Salvator, to whom each member was introduced in turn and to each of whom he spoke a few words.

During the afternoon parties were conducted round various old and new buildings of peculiar interest, amongst others the Palais Lanckoronski, where the Count himself acted as guide and did the honours of his marvellous collection of art-treasures. He gave his descriptions in five languages with equal ease, and afterwards entertained his 160 visitors at afternoon tea.

On Friday afternoon excursions were arranged to Klosterneuburg Monastery, to Schönbrunn Palace, and to Castle Kreutzenstein, the seat of His Excellency Count Wilczek. Here 300 visitors were received by the Count, who conducted them over the castle he has spent thirty-five years in rebuilding on mediæval lines, and wherein is stored all manner of mediæval treasures. Besides providing refreshments for his numerous visitors, Count Wilczek had most thoughtfully arranged for their conveyance in carriages to and from the station.

In the evening about 700 guests were entertained by the Society of Austrian Engineers and Architects at a dinner on the Kahlenkerg. From this hill one enjoys the most extended and beautiful view of the city of Vienna, which at night-time presented a fairy-like appearance with its myriads of twinkling lights. The fête was a brilliant one, and ended with a fine display of fireworks in honour of the sixtieth anniversary of the founding of the society.

On Saturday a final excursion was arranged to the Country Lunatic Asylum "Am Steinhof," whose remarkable chapel was designed by Herr Otto Wagner in his modern style. In the afternoon Herr Wagner kindly conducted a party round the new Post Office Savings Bank, one of the most striking modern buildings in Vienna. His motto is Truth and Suitability, hence in his design every feature explains itself and nothing superfluous is admitted. The entire façade, six stories in height, is studded with aluminium-headed nails 1½ in. in diameter. This he explains as follows: he was obliged to adopt the most rapid method of building, so the construction is of brick. This material is, however, not sufficiently durable for his purpose, so he faced the brick with ¾-in. slabs of marble and artificial stone, about 15 in. square, and secured each slab to the brick by a 5-in. nail, which pierces the centre of the slab. The nails fulfil the double purpose of holding the slabs in position till the cement bed hardens and of bearing witness that the stone is not constructional. Two other remarkable houses by Herr Wagner are built in the Wienziele. These are blocks of flats, seven stories in height, with no moulding or projection or horizontal lines on their long façades except interrupted cills, main cornice and uninterrupted balcony to first floor. One block is faced with cement, bare of all ornament except at the angles and upper story, where the spaces between the windows are filled with boldly-modelled foliage painted gold. This forms a kind of interrupted frieze to the simple, though greatly-projecting cornice. The effect is striking and pleasing and quite unique. The other block is equally flat and devoid of mouldings, but the entire surface is clothed with pale buff vitrified tiles, over which are strown heroic-sized, rose-coloured poppies, with blue poppy heads and green foliage. These colours are reproduced in the greatly-overhanging cornice, in which colour decoration takes the place of moulded members. This artificial facing presupposes a construction of ferro-concrete. Another remarkable ferro-concrete block of flats is Zacherl Mansions in the Neuenmarkt, designed by Plecnik, which shows a most suitable treatment of the material. The façades are faced with slabs of grey granite alternately 2 ft. 6 in. and 1 ft. in width, the vertical joints being covered with granite rolls 2½ in. in diameter. Not a single horizontal feature is introduced into the design with the exception of the cornice crowning the sixth story. This is of red granite, 5 ft. deep, and is divided into four members only, two fascias and two bands of ornament resembling roughly blocked-out arrow tails, lying horizontally in an unbroken series. The cornice is supported on the main façade by twenty red granite figures, 7 ft. high, cut off at the knees. Another remarkable though hardly attractive modern building is the business premises of Messrs. Gerngross in the Mariahilferstrasse, literally a sheet of glass from pavement to roof. Within a façade 85 ft. in length, the solid vertical supports amount to 5 ft., and consist in their outward appearance of 15-in. marble piers with ormolu mountings. The most solid part of the design is the immense modelled bronze frieze, crowning the façade of glass. The design represents commerce, and owing to the great height at which it is situated, contains few features, broadly modelled and easy to distinguish.

The festivities of the Congress terminated with a farewell banquet at the Continental Hotel on Saturday evening, at which about 200 members were present, besides distinguished guests. After Herr Wagner had proposed the health of the Emperor, the Patron of the Congress, Oberbaurath v. Wielemans gave the toast—The Delegates of Foreign Countries. This toast was replied to by Messrs. Daumet (Paris), Cannizzaro (Rome), Velasquez (Madrid), Dulfer (Dresden), Stokes (London), Totten (America), Berindey (Bucharest), Mariscal (Mexico), and Nagy (Budapest).

On Sunday, at the invitation of the Budapest Society of Architects, a number of members proceeded on a three days' visit to the Hungarian capital.

At the final sitting of the Comité Permanent on Saturday, it was decided, on the invitation of the Italian Government, to hold the ninth International Congress of Architects in Rome in October, 1911.

THE GEORGE'S DOCK SITE, LIVERPOOL.—The *Liverpool Courier* announces that the central site of the old George's Dock has been purchased by Mr. William Cubitt, a Government contractor, of London, with whom Mr. W. Aubrey Thomas, the Liverpool architect, has entered into an arrangement for the erection of a commercial building on behalf of a large private firm. The amount agreed upon is 12*l.* a yard, making a total of about 85,000*l.*

CONTRACTS OPEN.—The Commercial Intelligence Branch of the Board of Trade have received from the acting British Consul-General at Antwerp copies of specifications issued by the Antwerp Municipal authorities in connexion with calls for tenders for the following contracts:—(1) The construction of a metal-shed, to form an annexe to the Montevideo warehouse, at the estimated cost of 57,650 francs (about 2,306*l.*). A deposit of 2,500 francs (about 100*l.*) will be required to qualify any tender. (2) The supply of 1,600 metres of electric cable. A deposit of 2,000 francs (about 80*l.*) will be required. Tenders, enclosed in sealed, registered envelopes, should be addressed to Monsieur le Bourgmestre de la Ville d'Anvers, Hôtel de Ville, Antwerp, by whom they will be accepted not later than June 18. The specifications (*cahiers des charges*) may be obtained from the Hôtel de Ville, at a cost of 1 franc in the case of the first of the above contracts, and of 0·50 franc in the case of the second. Copies may be consulted by British contractors on application at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, London, E.C.

## THE ORIEL WINDOW, CHANTMARLE.

THE interesting old manor house rejoicing in the delightful name of Chantmarle is situated between Dorchester and Evershot, by the side of the Great Western main line to Weymouth. Like so many of the smaller manor houses of Dorset it has descended in the social scale and is now used as a farm-house. Its erection was commenced by Sir John Strode in 1619, and from Hutchins we learn that it cost 1,142*l.* to build, "besides much stone and timber trees given to me by my neighbours." The manor itself dates back to the days of Henry III., when its owner was one, Robert Chantmarle de Chantmarle. The house has been shorn of its wings, but the long front, of which the entrance porch with its delightful oriel is the most distinctive feature, remains in excellent condition.

## ARCHITECTURE AT THE ROYAL ACADEMY.—IV.

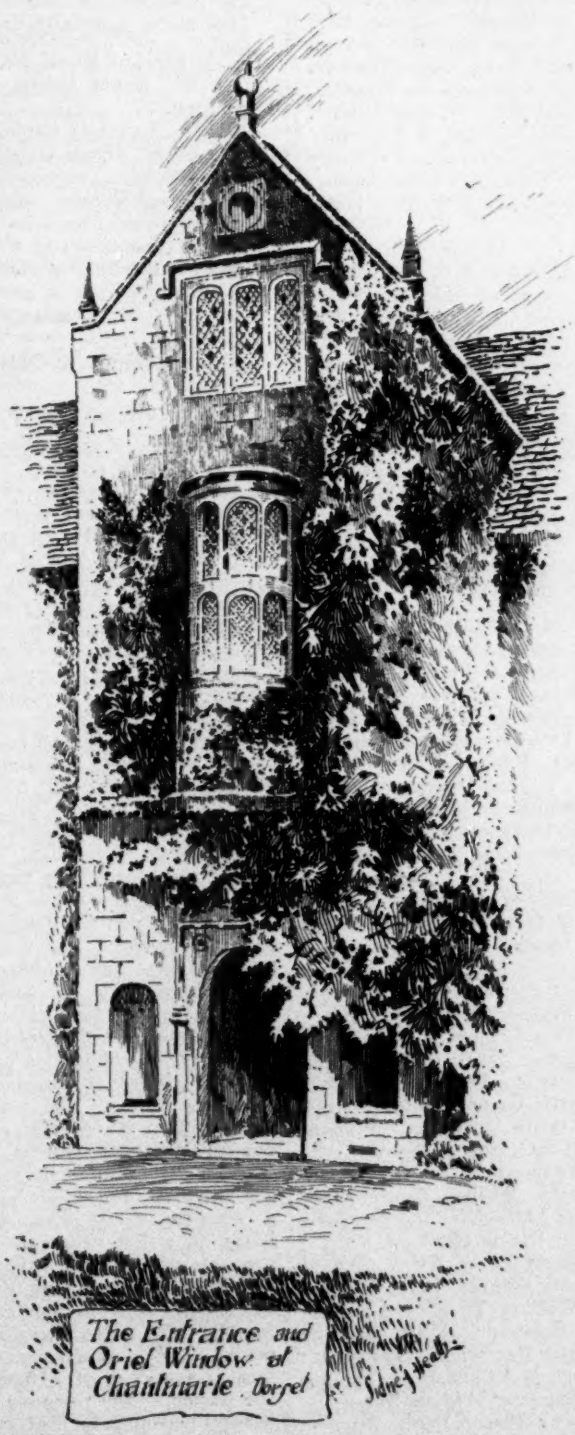
### DOMESTIC ARCHITECTURE.

DOMESTIC architecture is, as usual, very much in evidence on the walls of the Architectural Room. Mr. Gerald C. Horsley's "Coverwood, Surrey" (1555), is a tolerably satisfactory, but not very inspired design, nor is the drawing particularly attractive. The loggia at one end of the elevation is pretty enough; it is eminently a "handsome residence." Mr. A. N. Prentice's "Six Bells Inn, Witham-on-the-Hill, Lincolnshire" (1556: no plan), is an effective pen-and-ink perspective of a rather picturesque design. The window-heads, vertically jointed, formed by a band of squared stone, which runs in the manner of a string course along the whole elevation, are annoying; the eye requires some indication of an arch form in the facing. The "House and Garden near Sherborne, Dorset," of Mr. C. E. Mallows (1557), is a very pretty pencil drawing. The centre is very effectively emphasised by the grouping of the stacks, and, below, by a large mullioned oriel running from ground to first floor; lighting a staircase-hall, possibly; but this point, as well as the angle at which the wings run out from the central block, in the absence of a plan is not very clear.

Mr. Stanley Hamp's "Marsham's Farm-house, Gerrard's Cross" (1559), is not altogether unattractive, though why the half-timbering should stop abruptly at the kitchen wing, and give place to hung tiles, we fail to see. It may give a meretricious diversity to the elevation, but it is certainly at the expense of consistency; much as if one should build a Norman nave with an Early English chancel. Another of Mr. Prentice's compositions, the "Proposed New House, Furzen Lease, South Cerney, Gloucestershire" (1560: no plan), is represented by a delightful pen-and-ink drawing. In general, the design is of the Cotswold type, and very charming in the perspective, in spite of the garden wall, inserted, we suppose, as a sop to modernity. "Forest Hill, Wimborne," by Messrs. Forsyth & Maule, (1562), a combination of Georgian sash-windows and external shutters with farm-house gables, makes a distinctly pleasing whole. The blank wall of the offices towards the garden front is agreeably screened by a pergola; the paved court through which the entrance is reached is an appropriate and original feature. The plan shows a fine and capacious hall. Mr. Gilbert Fraser's "Dunchurch Lodge; terrace front" (1572), is a sober and dignified elevation, well shown by an admirable wash drawing. Perhaps the entrance-door is rather unhappily placed, as it tends to disturb an otherwise symmetrical elevation. Mr. Ronald P. Jones' "Silverlands, Chertsey: alterations and additions" (1575), presents a dignified XVIIIth century appearance, of brick with stone dressings, though somewhat marred by an ill-conceived porch. Architects of the "Augustan" age never played Elizabethan tricks with their proportions; a design should either be entirely original in composition, or a true representation of the type it professes to follow. Mr. Robert A. Briggs' "Manor House, Wormley" (1576), is a praiseworthy, if not remarkable, design.

Mr. M. H. Baillie Scott's "Proposed House at Albrighton, Salop" (1583), is shown by two elevations, and a plan, consisting of a central block, connected by curved screen-walls with two projecting wings, one containing the stables, the other the motor-house, and coachman's, or chauffeur's, residence. From a plan so typically Georgian one would expect a corresponding elevation. Instead of this, with quaint perversity, Mr. Baillie Scott has given us one of farmhouse, or rather cottage type, painfully forced into an inappropriate and grudging symmetry. As it stands it is neither one thing nor the other. To a lesser degree this fault is exemplified in Mr. E. S. May's "Wellington, Somerset" (1584). Here we have a half-timbered house surrounded by a balustraded terrace, a combination which strikes rather a jarring note. Under the centre of this terrace is an arched opening; where it leads to is not explained by the plan, possibly to a basement which may extend beneath the whole building. The lattice-like disposition of the timbering of the blank gable is not very pleasant.

The "Proposed House at Accrington, Lancs," of Mr. Walter H. Brierley, is shown by a very attractive pen-and-ink drawing. The style is Elizabethan, and the plan shows a very good arrangement. The "House at Llanelly" (1589), of Mr. Frank P. Floyd, is hung too high to show its merits. From what can be seen, it appears to be distinctly good. The "Design for Entrance Hall, 'Walden,' West Horsley," Mr. Stacey Aumonier (1603), is well worth examination. It is shown by a very pretty water-colour drawing. Very nice is the effect of the panelling inlaid with ebony, box, and tulip wood. The fireplace has a bold architrave, with a large, flat, surround of white marble edged with green. In the middle of this surround is inserted, apparently, a clock; though we should think the variable temperature of such a situation is not conducive to its accuracy. Mr. Robert W. Schultz's "House near Jerusalem" (1604) is a very satisfactory and appropriate design, sufficiently Oriental to harmonise with its surroundings. The rooms are ranged round a central court; there is a flat roof, above which rise two low cupolas, which would not be seen much from the ground level. The subject is represented by a dainty water-colour



The Entrance and Oriel Window at Chantmarle Dorset

Sidney Heath

bird's-eye view. Mr. Harold E. Mansfield's "Proposed Decoration of Dining-room, Whitcroft, Hants" (1609), shows a simple and dignified Georgian treatment. Professor Reginald Blomfield's "Moundmere Manor, Hants" (1616), we have already noticed in a previous article.

The "Gardener's Cottage and Laundry, Copseham, Surrey," by Mr. E. Guy Dawber (1619: no plan), is very attractive. As far as we can see from the drawing the roof is covered with pantiles. Mr. T. H. Mawson's "Garden Pavilion, Pergola, and Bridge, Shenstone Court, Staffs" (1620), is a fascinating composition, admirably shown by an attractive pen-and-ink drawing. Mr. J. Henry Seliers' "Thistleburgh, N.B." (1631), is appropriately stern and severe. "The Monastery Gate House, Caldey, South Wales" (1633: no plan), by Mr. J. Coates Carter, is represented by one elevation and no plan, consequently it is not very easy to understand. The "House at Johannesburg," of Messrs. Baker & Masey (1642), is a very good conception in the Colonial Dutch manner. The colouring of the foreground is rather unsatisfactory. Messrs. Adams & Holden's "Lodge at Apsley Heath, Beds" (1643: no plan), shows a large central stack, not ineffective in appearance. The drawing is unpleasant in colour. We suppose the purplish wash indicates hung slates.

The "House, Atbara, Red Sea Coast," Mr. George W. Lord (1661: no plan), is another example of suitability to surroundings. It is a pity there is no plan attached: Mr. Edgar Wood's "House at Stafford" (1662: no plan) shows this gentleman's usual manner. Why such small windows and such forbidding blank wall spaces in a climate like ours, where we require all the light and heat that the sun can give us? "Tekell's Castle, Frimley," Messrs. H. R. & B. A. Poulter (1666), is well shown by two elevations and ground and first floor plans, forming a pleasing and sober design. Mr. William Hunt's "Merrievale Court, Lincolnshire" (1667), is unfortunately skied. As far as can be seen, it seems well worth attention. The grouping of the gables and stacks is very successful. The sky in the drawing seems rather too grey in tone to justify such sharp shadows. Mr. C. F. A. Voysey exhibits a sheet of plans and elevations, very delicately finished, of a "House at Higham, Woodford, Essex" (1668). This, too, is hung too high to be properly appreciated; as a drawing, it is one of the finest in the room. "Woodcote, Camberley," another work of Messrs. H. R. & B. A. Poulter (1669), is by no means so successful as their "Tekell's Castle, Frimley," which we referred to a few lines back. The curved braces in the gable look very weak to the eye. Mr. Ernest Newton shows a rather gaudily-coloured perspective entitled "House at Wokingham, garden front" (1681: no plan). The porch is not very graceful, but the whole effect is quiet and unstrained. The "New Wing, Wiveton Hall, Norfolk" (1693: no plan), by Mr. E. Guy Dawber, is in keeping with the older portion; the drawing is an exceedingly good one, well showing the quaint and delightful effect of the moulded brick mullions so common in that part of the country. Mr. W. D. Caröe is represented by a fine wash drawing of "Newport Castle, as in the XVIIth Century" (1710: no plan). In the "Loggia at End of Lake, Hever, Kent" (1712), Mr. Frank L. Pearson shows a very clever and artistic design. Mr. Norman Evill exhibits a very pretty tinted pen-and-ink drawing of a "House at Stanwix, Carlisle" (1725: no plan). There is nothing very remarkable about the design, which is quiet and in good taste. Perhaps the octagonal window in the gable is rather too restless. The same qualities of good taste are evident in the three drawings of Mr. C. R. Ashbee illustrating his reconstruction of the "Norman Chapel, etc., Broad Campden, Glos." (1733). The corbel of the porch in the centre drawing is cut in the semblance of a dragon, holding by its teeth a lantern, in the true mediæval spirit. The colouring is rather muddy.

The improved standards of draughtsmanship and design which have been noticeable in the past few years are well maintained in the examples of domestic work shown at this year's exhibition.

## THE ROYAL INSTITUTE OF BRITISH ARCHITECTS:

### THE ANNUAL ELECTIONS.

THE result of the elections was announced at the Business Meeting last Monday, when the Council and Standing Committees were declared duly elected as follows:—

*The Council.*

*President.*—Ernest George.

*Vice-Presidents.*—James Sivewright Gibson; Edwin Thomas Hall; John William Simpson; Leonard Stokes.

*Hon. Secretary.*—Alexander Graham, F.S.A.

*Members of Council.*—Reginald Blomfield, A.R.A., M.A.Oxon., F.S.A.; John James Burnet, A.R.S.A. (Glasgow); Alfred William Stephens Cross, M.A.Cantab.; Edward Guy Dawber; William Flockhart; John Alfred Gotch, F.S.A. (Kettering); Edward Augustus Gruning (Past-Vice-President); Henry Thomas Hare (Past-Vice-President); George Hubbard, F.S.A.; Henry Vaughan Lanchester; Edwin Landseer Lutyens; Mervyn Edmund Macartney, F.S.A.; Ernest Newton; William Alfred Pite; Andrew Noble Prentice; Halsey Ralph Ricardo; John Slater, B.A.Lond.; Paul Waterhouse, M.A.Oxon.

*Associate Members of Council.*—Henry Arthur Crouch; William Curtis Green; Sidney Kyffin Greenslade; Stanley Hinge Hamp.

*Representatives of Allied Societies.*—Frederick Batchelor, A.R.H.A. (Royal Institute of the Architects of Ireland); George Bell (Glasgow Institute of Architects; Hippolyte Jean Blanc, R.S.A. (Edinburgh Architectural Association); George Thomas Brown (Northern Architectural Association); James Crocker (Devon and Exeter Architectural Society); Thomas Edgar Eccles (Liverpool Architectural Society); Mowbray Aston Green (President of Bristol Society of Architects); Arthur Ernest Heazell (Nottingham Architectural Society); Paul Ogden (Manchester Society of Architects).

*Representative of the Architectural Association (London).*—Walter Cave.

*Standing Committees.*

*Art.—Fellows:* Robert Shekleton Balfour; Edward Guy Dawber; William Flockhart; William Adam Forsyth; James Sivewright Gibson; Henry Thomas Hare; Professor William Richard Lethaby; Edward Schroder Prior, M.A.Cantab., F.S.A.; Edwin Alfred Rickards; John William Simpson.—*Associates:* John Anderson; Arthur Thomas Bolton; Thomas Davison; Sidney Kyffin Greenslade; Walter John Tapper; Edgar Wood.

*Literature.—Fellows:* Alfred William Stephens Cross, M.A.Cantab.; John Alfred Gotch, F.S.A.; George Hubbard, F.S.A.; Edward Schroder Prior, M.A.Cantab., F.S.A.; Halsey Ralph Ricardo; Professor Frederick Moore Simpson; Professor Ravenscroft Elsey Smith; Richard Phenè Spiers, F.S.A.; Hugh Stannus, A.R.C.A.; Paul Waterhouse, M.A.Oxon.—*Associates:* Frederick Chatterton; William Curtis Green; Herbert Passmore; Arthur James Stratton; William Henry Ward, M.A.Cantab.; Percy Leslie Waterhouse, M.A.Cantab.

*Practice.—Fellows:* William Henry Atkin Berry; Max Clarke; Alfred William Stephens Cross, M.A.Cantab.; George Hubbard, F.S.A.; John Murray; Sydney Perks, F.S.A.; Alfred Saxon Snell; Henry Tanner, jun.; William Henry White; William Woodward.—*Associates:* Edward Greenop; Edwin Richard Hewitt; Herbert Hardwicke Langston; Horatio Porter, M.A.Cantab.; Thomas Edward Pryce; Augustus William Tanner.

*Science.—Fellows:* Harry Percy Adams; Max Clarke; Bernard Dicksee; William Dunn; Matt. Garbutt; Francis Hooper; Charles Stanley Peach; Sydney Perks, F.S.A.; Herbert Duncan Searles-Wood; Alfred Saxon Snell.—*Associates:* Henry William Burrows, F.G.S.; Alan Edward Munby, M.A.Cantab.; Francis Winton Newman; Digby Lewis Solomon, B.Sc.Lond.; Harry Inigo Triggs; Ernest William Malpas Wonnacott.

The Hon. Auditors are Messrs. Henry Tanner, jun., and Arthur William Sheppard.

The Secretary read the Scrutineers' Report announcing the election of the following candidates:—

*As Fellows.*

John Brooke.
Alfred Morris Butler.
Frederick Ernest Pearce Edwards.
Frank Minshull Elgood.
George McLean Ford.
Ernest Augustus Runtz (Qualified for Associate 1889).

The following candidates were elected by show of hands under by-law 9, viz.:—

*As Associates.*

John Jackson Beck (Probationer 1901, Student 1904, Qualified 1907), Toronto.
Samuel Buttery Birds (R.I.B.A. Colonial Examination 1907), Toronto.
Harry John Venning (Special Examination 1907).

*As Hon. Associate.*

Gerald Edward Moira, Professor of Painting at the Royal College of Art, South Kensington.

The Hon. Secretary having announced the decease of M. Julien Guadet, the eminent French architect, whose election as Hon. Corresponding Member was to have taken place that evening, the meeting resolved that a letter of sympathy and condolence be sent on behalf of the Institute to the family of the late architect.

## Legal Column.

### LANDLORD AND TENANT.

THE decision of the Court of Appeal in the case of Hugget *v.* Miers is one of general interest. The defendant was the owner of a building the different floors of which were let out in separate tenements as offices. The staircase was lighted by gas supplied, not by the defendant, but from meters in the possession of the respective tenants. The lights were put out by the tenants as they respectively left the premises. The plaintiff, a canvasser in the employment of one of the tenants, went to the premises on business and left after all the lights were extinguished. On reaching the ground floor he turned the wrong way, and, mistaking another door for the front-door, fell down into a yard. The plaintiff brought an action claiming damages from the defendant, but the jury found for the defendant. On the application of the plaintiff for judgment or a new trial the main point was whether there was a duty laid upon the defendant to keep the staircase lighted. The Court held that in this case there was no obligation on the part of the landlord to his tenants to keep the staircase lighted, they having undertaken to light the staircase themselves, and that there was no greater obligation on the part of the landlord towards an outsider or stranger than there was towards the tenants themselves. A distinction would exist were the accident due to structural defects, for in such an event the landlord would appear to be liable. The case is not wholly satisfactory, since a stranger would seem to be nearly as likely to suffer injury from an unlighted staircase as from one structurally defective, and would know nothing of the terms of the agreement between landlord and tenant. Anyone may have occasion to visit such offices, possibly on business so urgent that he must proceed up the dark staircase, and the owner of the premises would seem the natural person to be held liable.

### EXTRAORDINARY TRAFFIC.

Some highly technical considerations arose in the case of Rex *v.* Judge James and Midland Railway Company, but the decision may be shortly noted. The Bath Rural Council were suing the Midland Railway Company in respect of expenses incurred in repairing highways after extraordinary traffic caused by five vehicles which were under five tons in weight and were therefore "light locomotives" under the Locomotives on Highways Act, 1896, as extended by the Heavy Motor Car Order, 1904, but it was contended that there was no jurisdiction in the County Court to entertain the claim. Under the Highways and Locomotives (Amendment) Act, 1878, such expenses have to be recovered summarily before justices, but by the Locomotives Act, 1898, this procedure was amended, and such expenses if not exceeding 250*l.* are recoverable in the County Court, and if exceeding that sum, in the High Court. Sect. 17, subs. 2, of this latter Act, however, provides that "Nothing in this Act shall affect light locomotives within the meaning of the Locomotives on Highways Acts, 1896," and it was contended that where light locomotives were concerned this preserved the summary jurisdiction. The Divisional Court decided that the meaning of the above subsect. was that nothing in the Act should affect light locomotives as distinguished from other vehicles, but that this did not apply to questions of procedure which affected them in common with other vehicles. Contractors should therefore note that the proper tribunal to deal with questions arising out of extraordinary traffic where the expenses to be recovered do not exceed 250*l.* is the County Court.

### MUNICIPALITIES AND CONTRACTS.

The case of Bourne & Hollingsworth *v.* Mayor, etc., of Marylebone, which in the Court below raised some very interesting legal questions as to the liability of municipal corporations in respect of their commercial undertakings, fully noted in our issue of February 22 last, has been carried to the Court of Appeal, where the decision has been reversed on the ground that no contracts had been entered into by persons authorised to bind the Corporation. The Borough Council was the electric lighting authority, and the plaintiffs were drapers. In 1904 the Corporation had given notice that they intended to alter the voltage from 200 to 240. The plaintiffs, who were about to open new premises in September, 1905, and to hold a sale there, entered into negotiations with the Corporation with a view to ascertaining whether the new voltage could be supplied by a particular date, as it would save the expense of installing plant only adapted to the old system. These negotiations took place with the resident engineer and manager for the electric light and the consulting engineer, and on June 15, 1905, the latter wrote to the plaintiffs that in his opinion there would be no difficulty in complying with their request by the first week in September. This was the first contract relied upon, and as to that the Court of Appeal have held that the jury were not entitled to hold it a contract at all, as it was only a hopeful expectation. The second contract was alleged to have been made in September by the resident engineer and manager after it had been found impossible to supply the new voltage by the date named. At an interview it was agreed that, if the plaintiffs would cut one lamp off each circuit, current at 200 voltage could be supplied for the sale. The Court of Appeal entertained some doubt whether this was a contract at all, but if it were they were of opinion that the resident engineer and manager had no authority to make it. Upon these findings it was unnecessary to determine the very interesting questions raised in the Court below, whether the contract must be under seal, and whether, if there had been a breach of it, nevertheless the only liability imposed on the Corporation would be the penalties prescribed by the Corporation's private Act. The decision only leaves the consumer somewhat in doubt as to whom he can contract with to bind the Corporation, and the answer seems to be that he must obtain a duly-sealed contract.

### EMPLOYER AND EMPLOYED.

A very important decision has recently been given by Mr. Justice Bray in the case of Coldwick *v.* Parsons, Jones, & Co., Ltd. The claim was one under Lord Campbell's Act by a mother for damages for the loss of her son, a collier, employed by the defendants. The defendants owned two collieries, which were connected by a railway owned and constructed by the defendants, and the men had the option of going to or returning from work by this railway, no charge being made for this convenience. The deceased had entered a carriage which was full, although there was plenty of room in the train, and had sat on the floor with his foot on the step outside. One of the bridges was being repaired, this operation being carried out by a mason, Jervis, by direction of the engineer to the defendants. The scaffolding used in this work was brought within a few inches of the carriages passing along the line, and this caught the deceased's foot and he fell from the carriage and was killed. The deceased as a rule would only be employed in one of the collieries; the engineer and Jervis were employed on both collieries, which were worked as one undertaking. The jury had found that the accident was caused by the negligence of the engineer and Jervis, and the question then arose whether these men were not in common employment with the deceased, in which event no action would lie. The judge, in reviewing the decided cases, applied the test—was the possibility of negligence on the part of the persons who occasioned the injury one of the risks contemplated by the servant undertaking the employment; and he held that, if the man whilst being conveyed on the railway was in the course of his employment, negligence on the part of those engaged on the railway must have been a risk contemplated by him. This led to the more difficult question, hitherto only raised under the Workmen's Compensation Act, what is the position of a workman whilst going to and leaving his employment; The judge on this point held that the risks which the servant accepts when he enters on his employment include those risks that he runs whilst he is actually on his employer's premises going to or returning from his work. In view of the importance of the decision it may be carried to the Court of Appeal, and a stay was granted.

## Engineering Societies.

SOCIETY OF ENGINEERS.—The following is an abstract of the paper upon "The Engineering Pros and Cons of the Metric System," read by Mr. Arthur H. Allen, A.M.I.E.E., on the 1st inst. The author explained that the metric system was devised to replace existing but disorganised weights and measures in France, and with a view to its ultimately becoming universal; to provide standards derived directly from natural and invariable bases, and to provide a homogeneous and interdependent system of units which should facilitate international commerce to the utmost. It was drawn up with immense labour and remarkable accuracy by a commission of scientists, and, in spite of several checks, was finally adopted in France, and eventually throughout the civilised world, with the exception of the British Empire, the United States, and Russia. While the original method of defining the length of the metre proved a failure, so many accurate copies have been made, and its value in terms of the wave-length of light has been ascertained with such precision (to within one part in ten million), that if all the existing primary standards were destroyed there would be no difficulty in replacing them with absolute certainty. In practice the advantages of simplicity and homogeneity have been fully realised, and there is no doubt that if the British adopt it the system will speedily become universal. A brief outline of the principal features of the system, as used in practice, was given, and it was shown that the accuracy of the relation intended to exist between the units of length and mass had been realised to a degree almost incredible, and far beyond all practical requirements. The educational economy of the system in comparison with British methods was demonstrated, and the saving of labour in commercial transactions due to its use, as well as the decreased liability to error in computation, was explained. The repeated reports of Parliamentary Committees, and the general support of the system by public bodies, were cited, and the handicap imposed upon British trade, both internal and external, by the continued use of the existing units was emphasised. The ease with which the metric system is applied to engineering work was shown, with examples, and it was pointed out that where the limit-gauge system is in use the adoption of the system does not even require the workman to become familiar with it, though no difficulty was experienced in teaching him. Both systems can be used simultaneously in the same shops without confusion, and the larger tools require no alteration to adapt them to the metric system. With the adoption of decimal coinage also the slide rule becomes available for commercial and industrial computations in general. The benefits to be derived from the compulsory adoption of the metric system would far outweigh any temporary inconvenience that might be incurred.

## Illustrations.

### RENAISSANCE AND MODERN CHURCHES OF PARIS.

#### VI.—SAINT SULPICE.

THERE existed on this site as early as 840, in the time of Charles the Bald, a church dedicated to Saint Sulpice, which in 1210 formed the parish church of Saint Germain. This former church was partly rebuilt in the XIIIth and XIVth centuries, and enlarged under Francis I. and under Louis XIII. But as it was nevertheless insufficient for the needs of the parish, its entire rebuilding was commenced in 1648, from the designs of Gamard, "maitre des œuvres de la Ville de Paris." Louis Levau, "Premier Architecte du Roi," who succeeded him in 1655, enlarged the scheme of the foundations and substructure, and at his death the works were continued by Daniel Guittard, who between 1672 and 1675 completed the choir with its aisles, and one of the transepts.

The work was then stopped for want of funds until 1719, when it was taken up again by Open-Oordt, or Opénordt, "Intendant des Maisons Royales." The building was completed in 1733 except for the principal façade, which was the subject of a competition in which Jean Servandoni obtained the first premium. He carried out the façade, with Bénard as his collaborator in the work. It was completed in 1745, except the towers; that on the right, commenced by Servandoni and continued by Maclaurin, has never been completed. That on the left has been completed by Chalgrin.

Then came the Revolution, and the church of Saint Sulpice was successively a Temple of Victory; a temple of the "Théophilanthropes"; and a Salle des Fêtes, in which was given, on the "15th Brumaire, An VIII" (1799), a great banquet in honour of General Bonaparte.

The nave internally is divided into five bays by piers with pilasters of the

composite order, carrying an entablature; the church is roofed by a semi-circular vault, with a small dome at the crossing, decorated with medallions painted by Lemoyne and Hallé, and sculptures executed by the brothers Slodtz.

Above the west entrance is placed the grand organ, the case of which, executed (1776-1781) from the design of Chalgrin, is decorated with some fine carving by Clodion. The pulpit, of about the same period, is also a remarkable piece of work; and among the curiosities of the church are two shell-shaped holy-water vessels which were presented to Francis I. by the Republic of Venice.

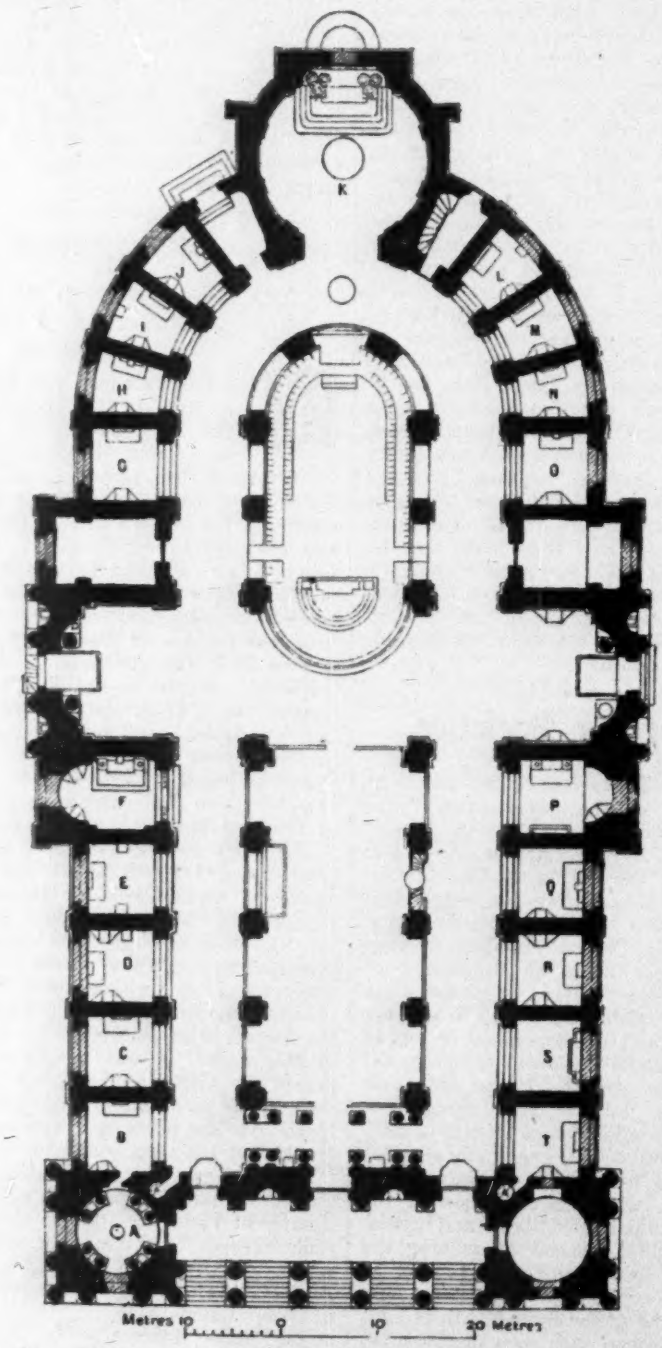
The high altar is in gilt bronze, and around the choir, in front of the piers, are a series of marble statues by Bouchardon.

The chapels which open out of the aisles have been decorated with paintings by many eminent artists—Delacroix (who decorated the chapel marked L on the right of the choir), Glaize, Landelle, Berthélemy, Lenepveu, and others. The domed ceiling of the Lady-chapel has been painted by Maillot, and the chapel contains also four pictures by van Loo and a very fine marble statue of the Virgin by Pigalle, placed in a niche over the altar.

In the sacristy is some fine wood-carving of the Louis Quinze period; there is also some fine XVIIIth century wood-carving in one of the chapels. One curious monument in one of the transepts should be mentioned, of a kind one does not usually find in a church; this is a meridian line laid down by Harry Sully, an English clockmaker who died in 1728, and completed in 1743 by Le Monnier. The object was to determine with precision the equinox of March, and from it the date of Easter Sunday.

In the immense crypt are to be found a good many interesting vestiges of the older church, also a font of the XVIth century, carried on a pedestal of much earlier date.

The architectural treatment of the lateral façades is of extreme simplicity, the whole architectural dignity being reserved for the main façade. This latter is characterised by that usually rather ungracious critic, Fergusson, as being, "though not without faults, one of the grandest of modern Europe"; and though this may seem a little exaggerated, the immense scale of its columnar architecture renders it very impressive, and Fergusson points out the fine effect of the doubling of the columns of the ground floor order, which are coupled not, as in St. Paul's, laterally, but at right angles to the façade, one behind the other. It seems a great pity that the two towers, on an otherwise symmetrical front, should not have been carried out according to the same design; in an architectural sense it would be quite worth while now to pull down the right hand tower and rebuild it similar to the other one. In the case of a mediæval church like Chartres the different character of the two spires is not of much consequence—it passes as part of the picturesque element in mediæval architecture. But Renaissance architecture does not deal with the picturesque, and will not bear irregularities of this kind.




*Plan of Saint-Sulpice, Paris.*

## PREMIATED HOUSES IN THE PARIS FAÇADES COMPETITION.

WE give this week photographs of two of the house fronts in Paris which received premiums in the last competition in new street façades in Paris. Both are by very eminent Parisian architects; that in Rue de Grenelle by M. Deglane, that in Rue de Paradis by M. Sortais.

Some of the detail is not in accordance with English taste, just as some of the detail in our recent street architecture would probably not be approved by French taste; but these points must be viewed in a catholic spirit, and there is a good deal to be admired in both designs. M. Deglane's treatment of the angle of his building is very clever.

The illustrations are from photographs specially taken for the *Builder* by M. A. Lévy.

## STREET FRONT, WARDOUR-STREET.

THIS is the design, by Mr. F. L. Pearson, for the front of Messrs. Novello's new premises in Wardour-street, the staircase of which was illustrated in our issue of January 25.

As we are giving this week illustrations of two of the recently premiated street fronts in Paris, we have purposely given in the same issue a design for a street front of about the same size by an English architect, to afford a comparison of the tendencies of English and French work for the same class of building.

## "HERONSDALE MANOR," WALDRON, SUSSEX.

THIS house is proposed to be built on an elevated site fairly level on the entrance side facing north-west, but sloping down considerably towards the south-east, and advantage has been taken of the fall of the ground by placing some of the servants' offices on a lower ground floor story, opening on to a kitchen courtyard (9 ft. below the level of the entrance forecourt) approached by a branch road from the carriage-drive, thus avoiding the usual range of one-story outbuildings.

The plans show the internal arrangements of the house, the morning-room being placed at the east corner in order to get a pretty view of Waldron Church amongst the trees about a mile away, all the other principal rooms commanding very fine views over undulating well-wooded country, with the South Downs and the sea in the distance.

The building is designed in the style of some of the old Sussex manor-houses, to be built of local rubble stone with Forest Row stone dressings, and the roof covered with old tiles partly from demolished farm buildings near the site, the picturesque XVIth century farmhouse being retained as a gardener's cottage adjoining the new kitchen garden.

LOUIS AMBLER.

MAINTENANCE OF ROADS.—In the Parliamentary papers, Mr. Ffrench asks the Chancellor of the Exchequer, having regard to the fact that Imperial grants are made for the upkeep of main roads in England and Wales to the amount of 250,000*l.*, and in Scotland to the amount of 35,000*l.*, and to the claim by Ireland for relief in this respect, whether the Government will appoint a Commission to inquire into the cost of roads, with a view to having all main roads kept up by Imperial funds.—Mr. Lloyd George replies that, as he is at present advised, he is not prepared to recommend the appointment of a Royal Commission with the object in question, but the subject is one to which he will give careful attention.

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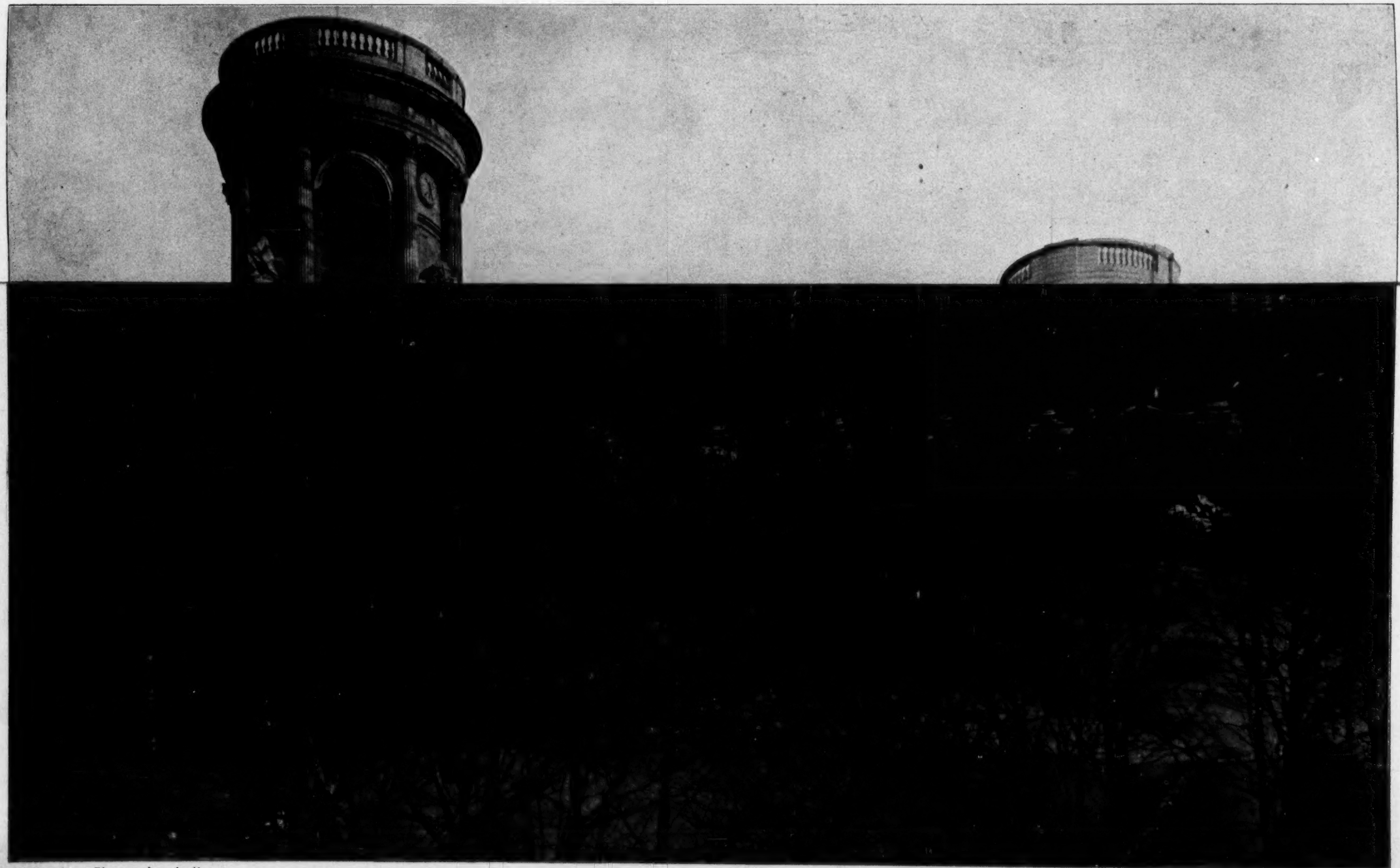


Albert Lévy, Photographer, Asnières.

Sprague & Co., Ltd., Printers, 4 & 5 East Harding St., E.C.

RENAISSANCE AND MODERN CHURCHES OF PARIS.—VI. ST. SULPICE.

t hand tower and rebuild it similar to other one. In the case of a mediæval rch like Chartres the different character he two spires is not of much consequence passes as part of the picturesque element mediæval architecture. But Renaissance itecture does not deal with the pictu-gue, and will not bear irregularities of kind.

## EMIATED HOUSES IN THE PARIS FAÇADES COMPETITION.

VE give this week photographs of two of house fronts in Paris which received miums in the last competition in new et façades in Paris. Both are by very nent Parisian architects; that in Rue de nelle by M. Deglane, that in Rue de adis by M. Sortais.

ome of the detail is not in accordance h English taste, just as some of the detail our recent street architecture would bably not be approved by French taste; these points must be viewed in a catholic it, and there is a good deal to be admired oth designs. M. Deglane's treatment of angle of his building is very clever.

he illustrations are from photographs cially taken for the *Builder* by M. A. y.

## REET FRONT, WARDOUR-STREET.

HIS is the design, by Mr. F. L. Pearson, the front of Messrs. Novello's new pre-es in Wardour-street, the staircase of ch was illustrated in our issue of uary 25.

s we are giving this week illustrations of of the recently premiated street fronts Paris, we have purposely given in the same e a design for a street front of about the e size by an English architect, to afford omparison of the tendencies of English French work for the same class of lding.

## ERONSDALE MANOR," WALDRON, SUSSEX.

HIS house is proposed to be built on an ated site fairly level on the entrance facing north-west, but sloping down siderably towards the south-east, and antage has been taken of the fall of the und by placing some of the servants' es on a lower ground floor story, opening to a kitchen courtyard (9 ft. below the l of the entrance forecourt) approached a branch road from the carriage-drive, s avoiding the usual range of one-story buildings.

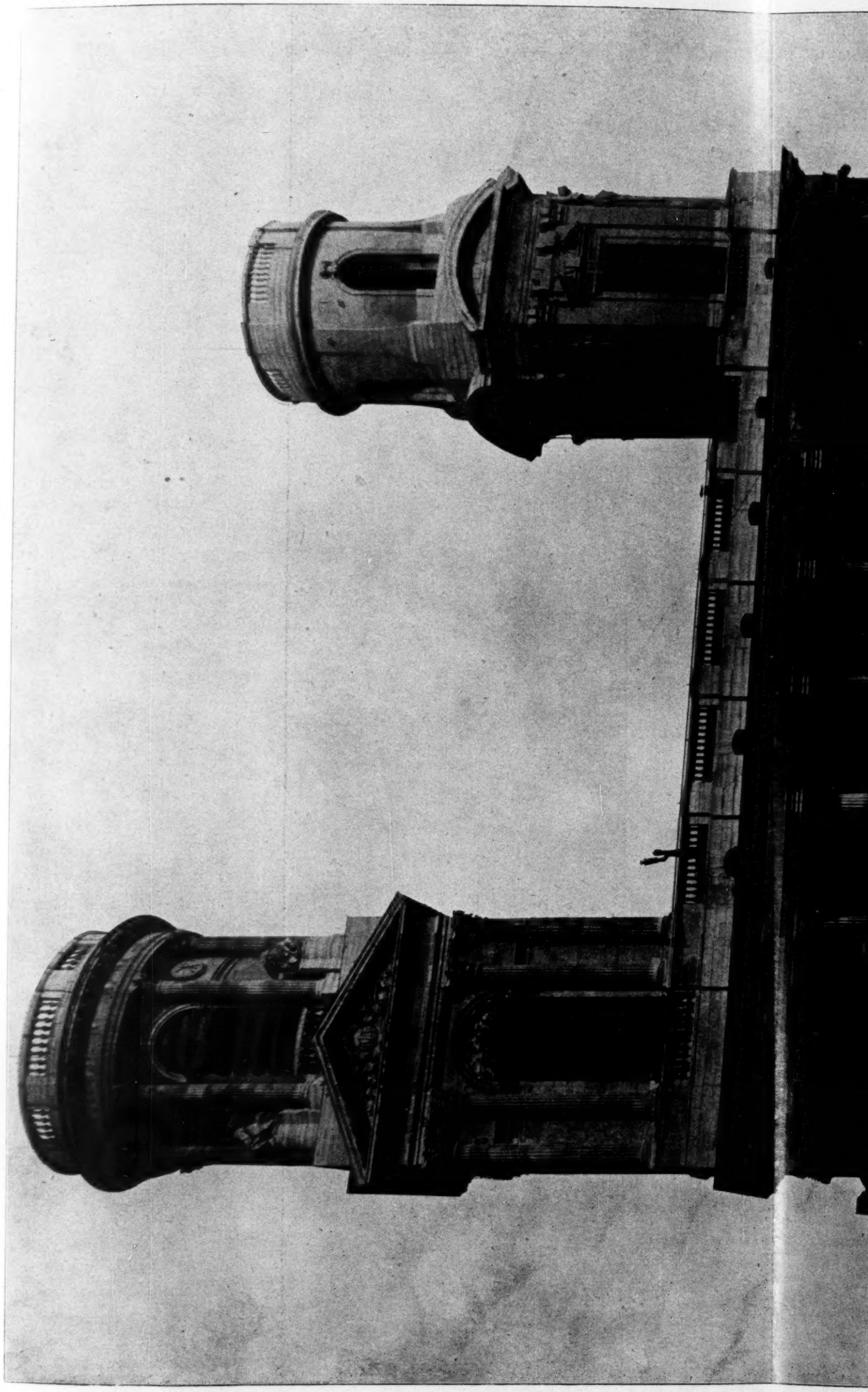
he plans show the internal arrangements he house, the morning-room being placed the east corner in order to get a pretty w of Waldron Church amongst the trees ut a mile away, all the other principal ms commanding very fine views over ulating well-wooded country, with the th Downs and the sea in the distance.

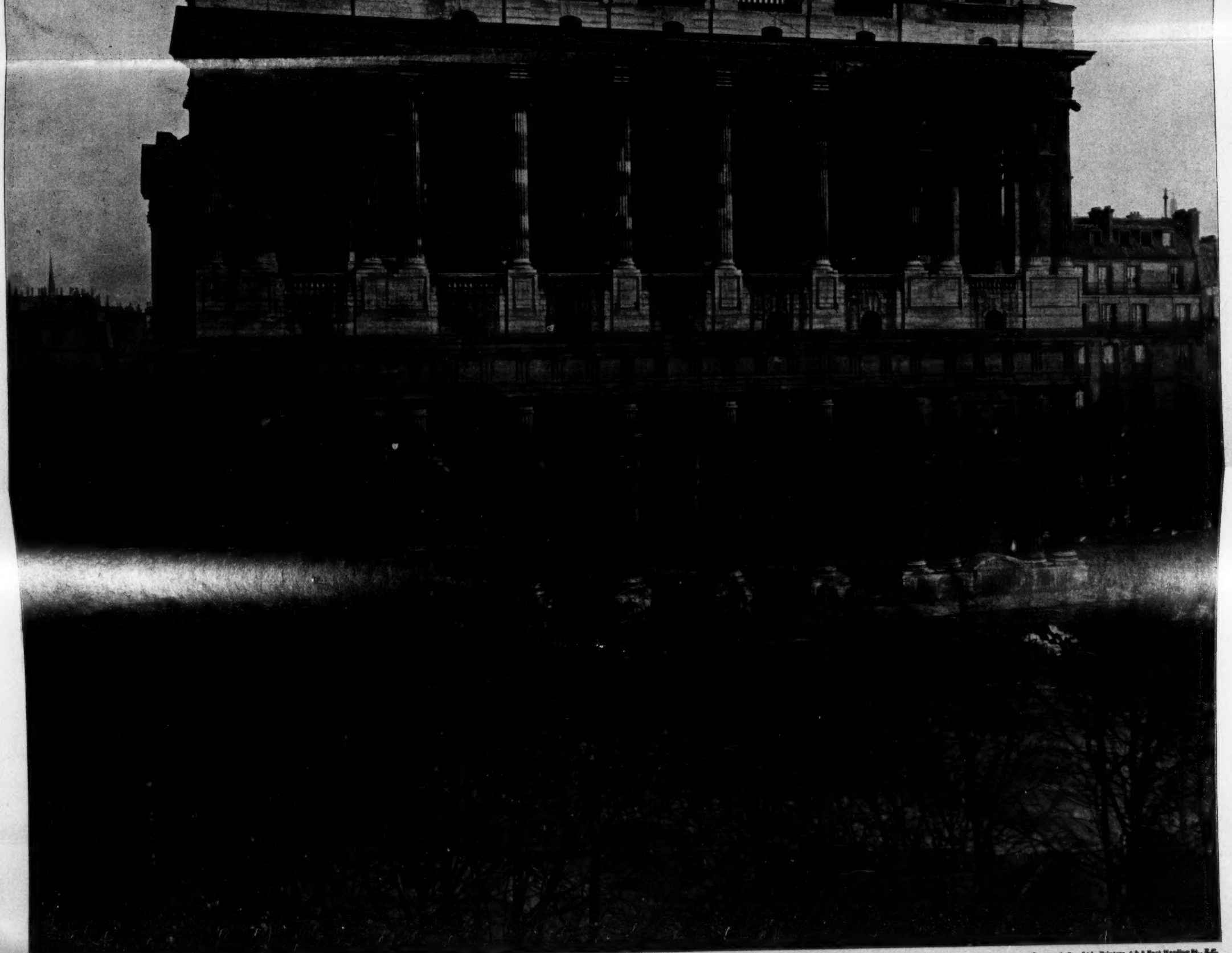
he building is designed in the style of e of the old Sussex manor-houses, to be t of local rubble stone with Forest Row e dressings, and the roof covered with old s partly from demolished farm buildings r the site, the picturesque XVIth century nhouse being retained as a gardener's tage adjoining the new kitchen garden.

LOUIS AMBLER.

AINTENANCE OF ROADS.—In the Parlia-ntary papers, Mr. Ffrench asks the ncellor of the Exchequer, having regard the fact that Imperial grants are made for upkeep of main roads in England and les to the amount of 250,000*l.*, and in tland to the amount of 35,000*l.*, and the claim by Ireland for relief in this re-t, whether the Government will appoint ommission to inquire into the cost of roads, h a view to having all main roads kept up Imperial funds.—Mr. Lloyd George replies t, as he is at present advised, he is not pared to recommend the appointment of a al Commission with the object in question, the subject is one to which he will give eful attention.







Albert Lévy, Photographer, Asnières.

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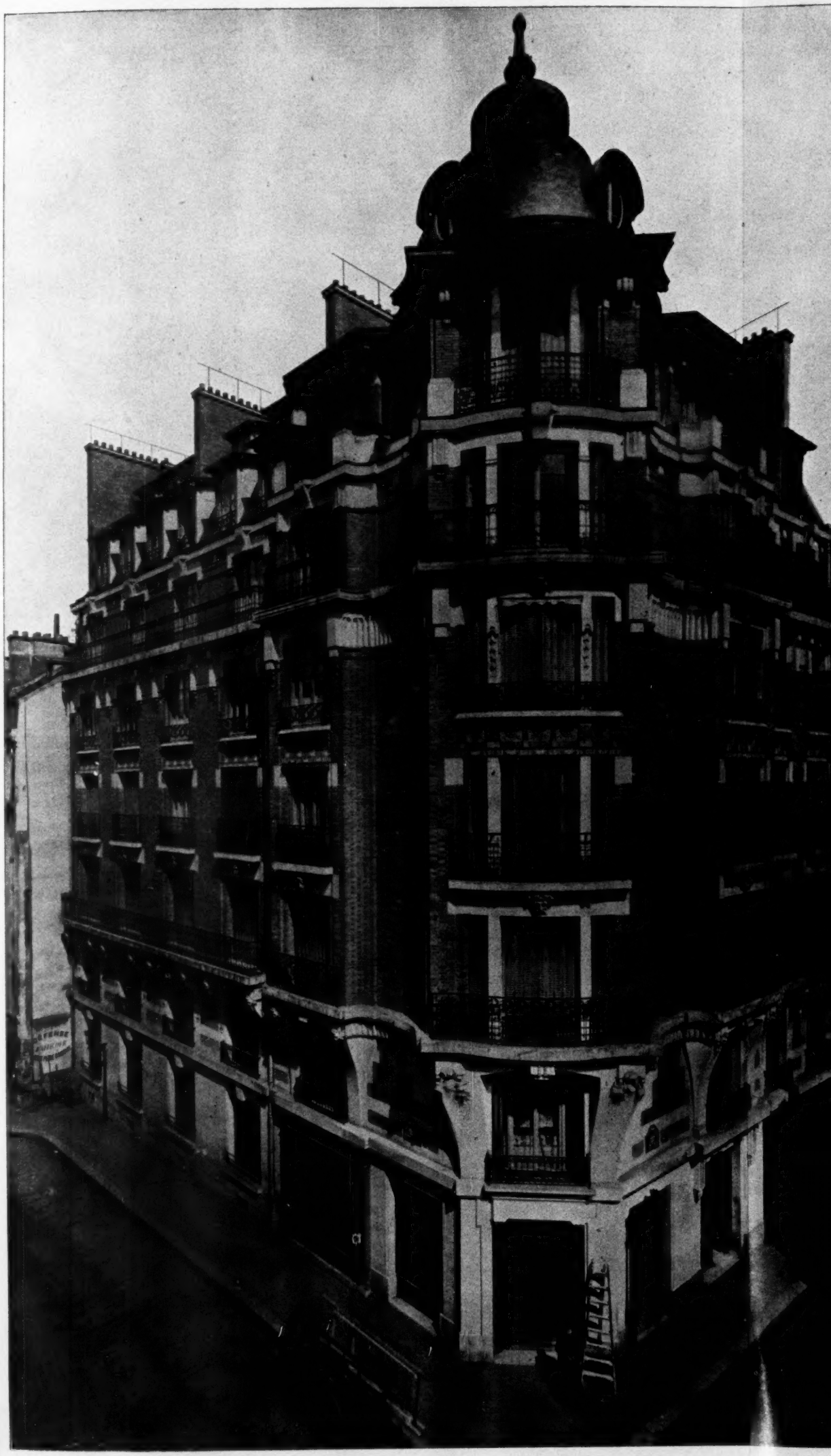
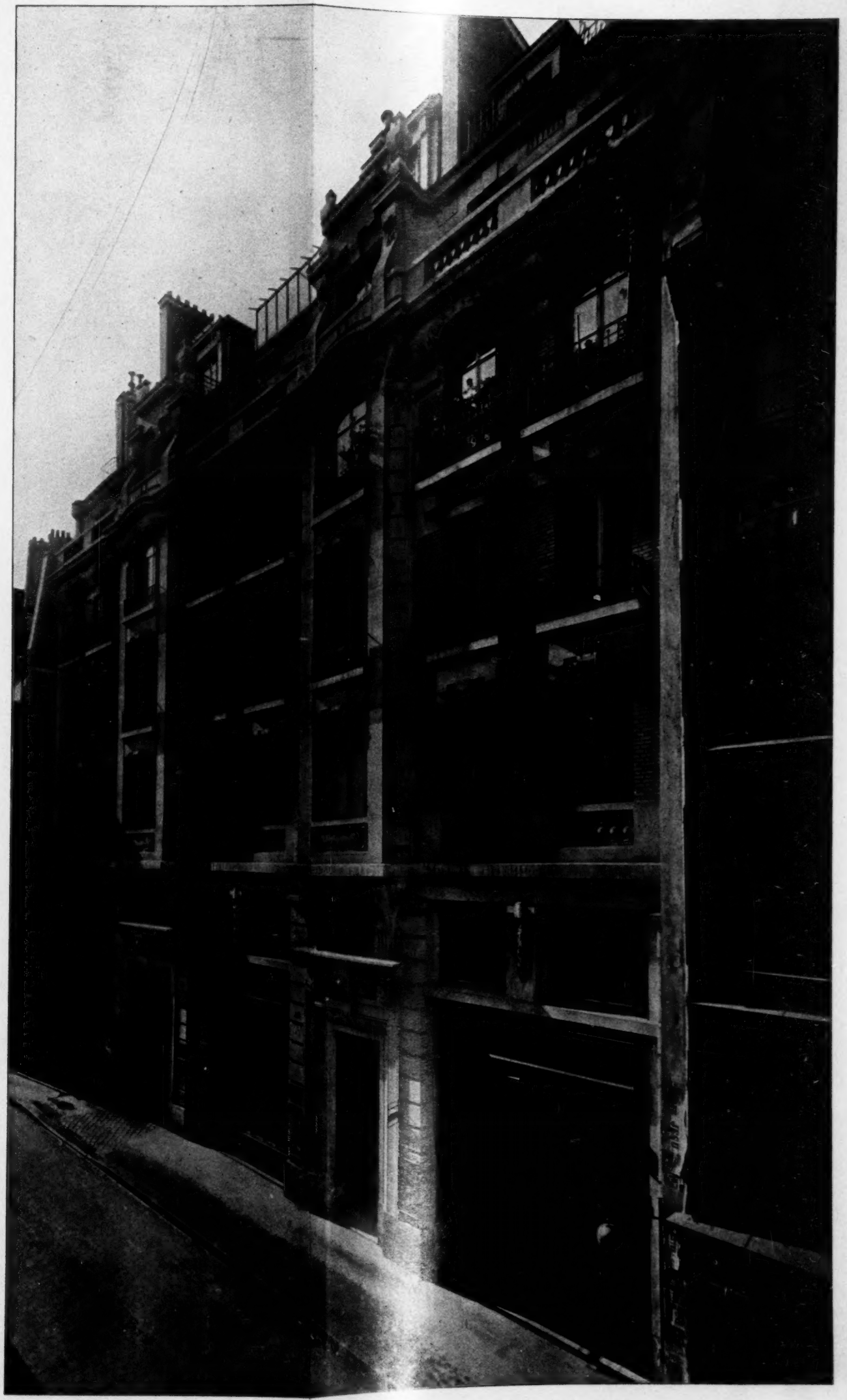
RENAISSANCE AND MODERN CHURCHES OF PARIS.—VI. ST. SULPICE.



NO. 90 RUE DE GRENELLE.—M. DEGLANE, ARCHITECT.



NOS. 7 & 7*bis* RUE DE PARADIS.—M. SORTAIS, ARCHITECT.

D PREMIATED HOUSES IN THE PARIS FAÇADES COMPETITION.

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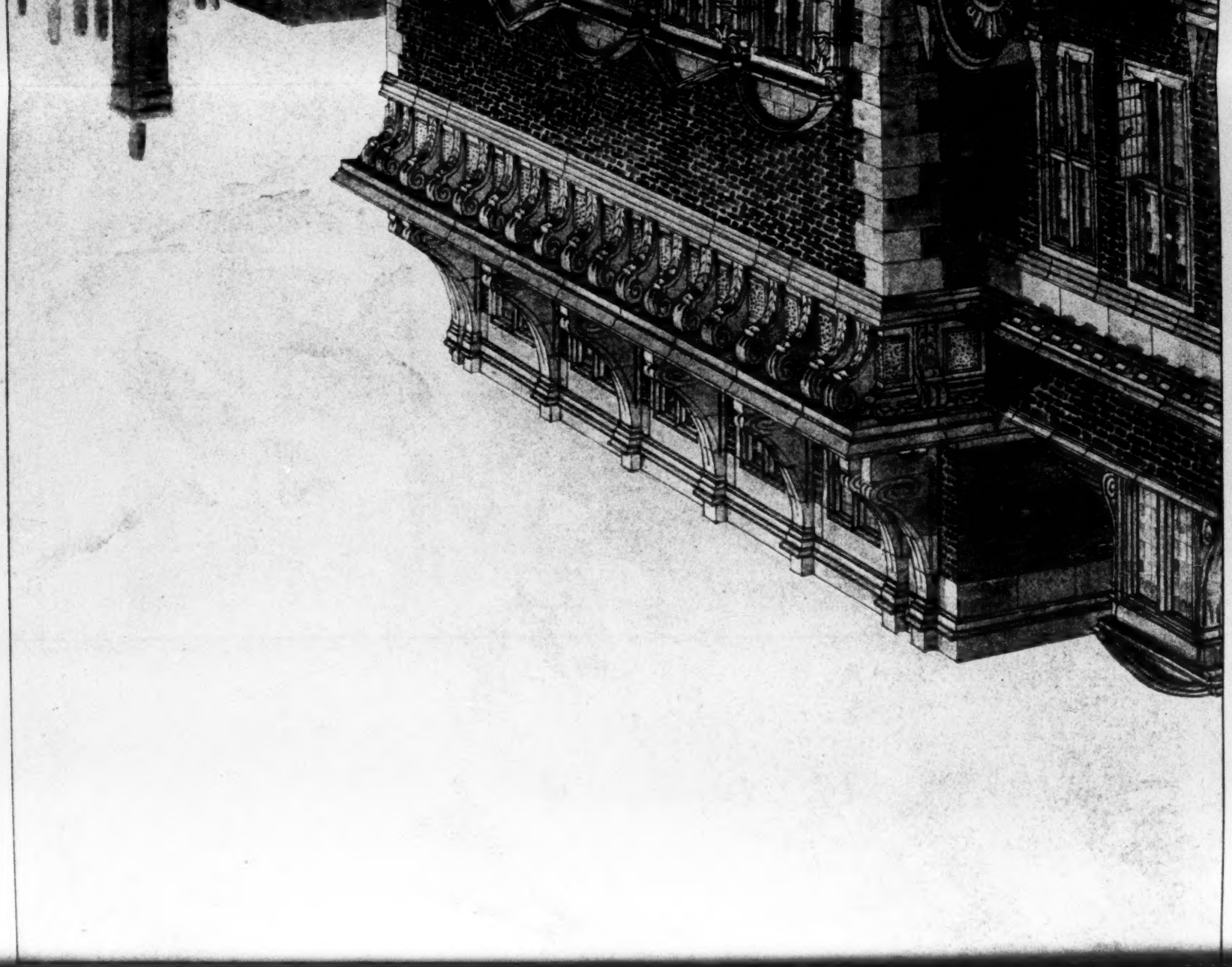

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The Garden Front of
Heronsdale Manor, Sussex
for G.M. Freeman Esq: K.C.
Louis Ambler, Arch!

PHOTO-LITHO. SPRAGUE & Co. LTD. 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

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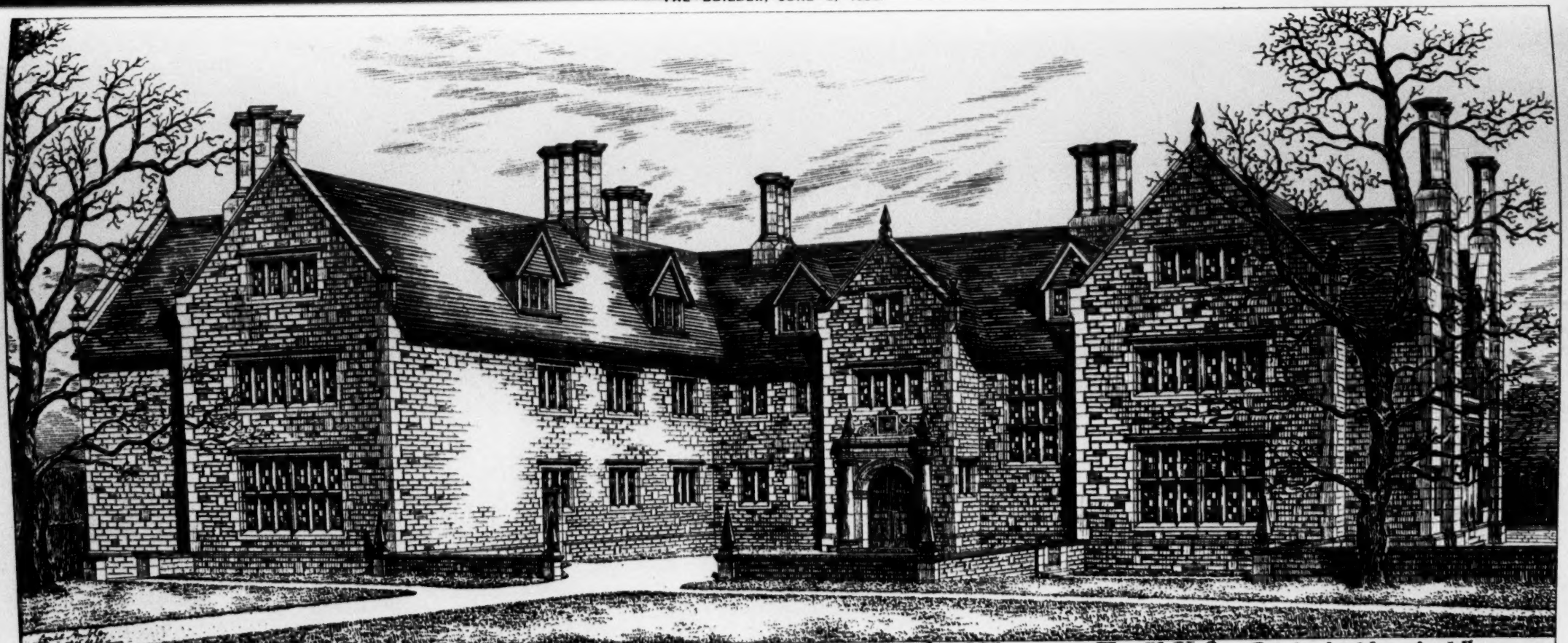

The Entrance Front, "Heronsdale Manor," Waldron, Sussex: for G.M. Freeman Esqre, K.C. Louis Ambler, Archt

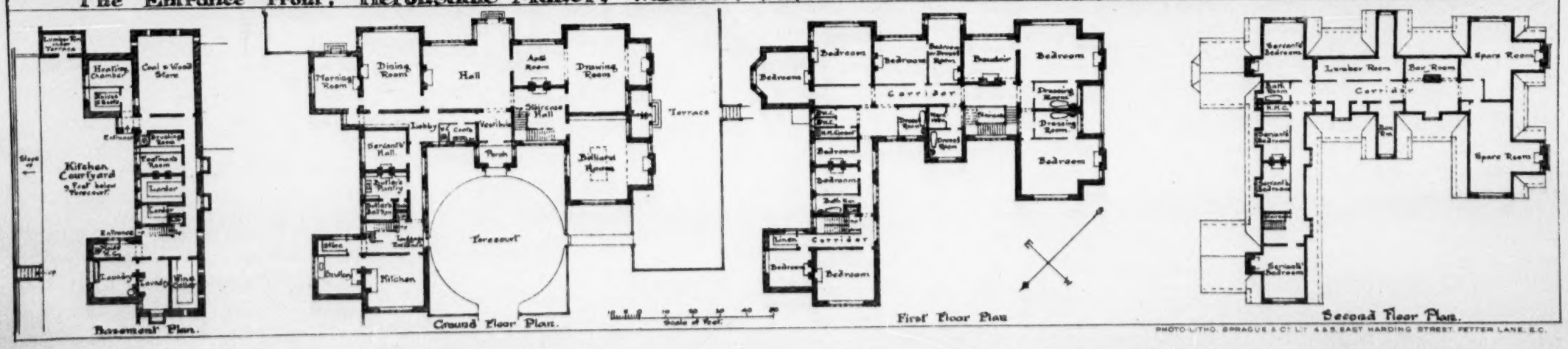


PHOTO-LITHO. SPRAGUE & Co LT 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

## ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS.

AN Eastern Counties district meeting of the members of the Association of Municipal and County Engineers was held at Norwich on Saturday, May 30. The business meeting was held in the Council Chamber at the Guildhall. Mr. C. H. Cooper (Wimbledon) presided in the absence of the President (Mr. J. A. Brodie, of Liverpool), and among those present were Messrs. W. Weaver (London), O. E. Winter (Hampstead), T. Cole (Westminster), secretary, J. C. Jenkin (Finchley), J. P. Norrington (London), A. E. Collins (Norwich), J. W. Cockrill (Great Yarmouth), district secretary, A. Bonne (Paris), J. S. Silcock (Leeds), and C. A. Hart (Leeds).

The Mayor (Mr. Gurney Buxton) welcomed the Association to Norwich, and expressed high appreciation of the work of Mr. Collins, who devoted himself heart and soul to his professional duties.

Mr. W. Weaver acknowledged the welcome given by the Mayor.

On the proposition of the Chairman, Mr. J. W. Cockrill (Great Yarmouth) was re-elected honorary secretary of the district.

Mr. Cockrill read a letter from Mr. Claude Robson (Willesden), as to the needs of the orphan fund of the Association, and 28*l.* 13s. was promised, including 3*l.* 10s. 6d. in new annual subscriptions.

*Sewage Works, etc., Norwich.*

Mr. A. E. Collins, M.Inst.C.E., City Engineer of Norwich, read a paper descriptive of the special features of the sewage pumping machinery, reinforced concrete rising main, and Travis system sewage tanks in progress at Norwich. He stated that the new pumping machinery at the Trowse outfall would consist of four Roturbo pumps, constructed by Parkers, Ltd., Wolverhampton, on Rees's patent.

One pump would be at the bottom of a vertical spindle having a 150-B.H.P. electric motor at the top. The pump would be fixed at such a level as to be self-charging, but it would stand in a dry chamber. The suction side would be connected with the pump by a 14-in. suction pipe fitted with a sluice valve.

The delivery side would have a sluice and a retaining valve, both of somewhat special character.

The motor circuit would be closed and opened by switch gear arranged in five steps, and operated by a float rising and falling with the sewage in the sewage pump, from which all the "Roturbo" pumps would draw. The electrically-driven pump was arranged to start and stop automatically, it being for nightwork, and when in use an attendant need not be present. In the event of the sewage flow becoming abnormal and beyond the capacity of this unit, the continued rising of the float closed circuits operating alarm bells in the dwellings (close at hand) of the attendants, who would start one or more of the units. The electric motor and equipments were being built by Messrs. Laurence & Scott, of Norwich, and the installation included Scott's patent switch gear, which was especially adapted for automatic working with big currents.

The current would be continuous at 440 volts, and obtained from the Corporation's mains.

The other three pumps would be similar, excepting that horizontal spindles would be provided; they would be fixed 11 ft. 6 in. above suction level, and would not be self-charging, this not being necessary, as they would be driven by gas-engines requiring the presence of an attendant for starting and stopping, who could charge the pumps when required by means of an electrically-operated "Roturbo" air-exhauster.

The pumps were each of a capacity of 2,800 gallons per minute, at a maximum total head (including friction) of 117 ft., and to deal with a variation of head from 117 ft. to 94 ft.

The guaranteed efficiencies of the pumps were 70 per cent. at the normal rated duty. The special feature of the "Roturbo" pump was that the power did not vary appreciably over the whole range of the variation in head.

This self-regulation was the unique feature of the Rees-Roturbo pump over an ordinary centrifugal or turbine pump, and this great advantage was accomplished by departing from the ordinary design of a centrifugal.

Each of the three horizontal spindle "Roturbo" pumps would be belt-driven by a 175-B.H.P. horizontal two-cylinder Tangye gas-engine, supplied with suction gas by a Tangye producer.

The existing sewage screen would be removed and a specially-designed screen substituted therefor in the existing pit. The new screen would consist of steel plates $\frac{5}{16}$-in. thick, perforated with closely-pitched circular holes of $\frac{7}{8}$-in. diameter, prepared by Poole's patent perforating machinery at Hyde, Cornwall.

The plates would be supported in angle-iron frames, which also support a large rectangular bottom box forming a detritus pit. The sewage pumped would be conveyed to the tanks in course of construction at Whitlingham Sewage Farm through a 36-in. rising main 2½ miles long, constructed of reinforced concrete on the "Bonna" system by the Columbian Fireproofing Co., Ltd., of 37, King William-street, E.C.

This construction was advised after prolonged inquiry and inspection of existing works, some of which had been in use fifteen years, and were apparently in perfect condition.

When the author of the paper was considering the scheme now in progress he obtained prices for cast-iron, steel, and "Bonna" reinforced concrete pipes, these latter being on the only system known to him likely to meet his requirements.

The result was that the "Bonna" pipes were offered laid and jointed complete in Corporation trenches at about three-quarters of the price of steel, and somewhat more than one-half the cost of cast-iron.

The Local Government Board had sanctioned a fifteen years' repayment period loan for these pipes, at the same time allowing a thirty years' period for ordinary concrete in sewage tanks.

The rising main would cross the river Yare by an inverted siphon. A relief or safety valve, of large size and special design, would be placed on the rising main at Trowse. It would be a double-beat valve, and, notwithstanding its discharge area being equal to 452 sq. in., which at the blowing-off pressure of 56 lb. to the square inch amounted to over 11 tons on that area, the actual weight of the valve and its superload would only amount to 12¼ cwt. The valve would open freely when the designed internal pressure was exceeded, but was controlled in closing by an adjustable cataract gear.

The greatest departure from ordinary practice was the sewage tanks. The Norwich Sewage Farm was laid out for broad-cast irrigation by crude sewage in 1868, and gave sufficiently good results till a few years since, when the substitution of an average of 3,000,000 gallons of strong sewage per day, for 6,000,000 gallons of subsoil water containing sewage soon showed the farm to be insufficient for the desired purpose.

As the result of many visits to sewage works in various parts of the country, of several inspections, and an investigation of the work accomplished by the hydrolytic and other tanks, he was forced, against his prejudices, to the conclusion that the Hampton experiments and treatment proved that the general practice of tank treatment of sewage was based on error, and he decided to recommend the adoption of the Travis system of hydrolytic tank treatment for Norwich.

Tanks were now being constructed to his designs, prepared in close collaboration with Dr. Travis, and embodying many new features of undoubted importance. The principles of the hydrolytic tank operation had been deduced from a prolonged study of sewage and from exhaustive experiments relating to the special condition in which the suspended matters exist therein, as well as from extensive and actual observations, conducted at Hampton, having reference to the nature of the operations occurring in all tanks. The liquid portion of the sewage, having brought the impurities to the disposal works, had fulfilled its essential object. It was not, to any appreciable extent, beneficially affected by being submitted to a tank operation. Indeed, when this was a prolonged one the liquid became deleteriously influenced by being saturated with the gases evolved from the decomposing sludge. The liquid, however, contained suspended solids which required to be eliminated and which were of all grades, varying from the readily depositable gross matters and finer substances, together known as the solids in suspension, down to the infinitesimally fine colloidal particles, which were accounted amongst the solids in solution.

The former of these could be arrested by an efficient tank operation; the latter were not depositable under practical working conditions unless they were brought into very intimate contact with surfaces.

The principles associated with the hydrolytic tank were:—

(1) To exclude from any prolonged tank operation as large a proportion of the liquid as possible.

(2) To effect the sedimentation of the depositable contents of the sewage in such a way as will avoid the rising floor of sludge, which has been seen to interfere with and to terminate other tank operations, by substituting therefor a disappearing floor of liquid, which will increase the sedimentation efficiency and will make it perpetual.

(3) To separate the hostile forces of deposition and gaseous eruptions by limiting these operations to their own separate compartments.

(4) To prevent undue accumulations of scum and sludge by periodically withdrawing that proportion which the special method of operating the tank may dictate.

(5) To correct the frequent outrush of disturbed deposited matters, the result of gaseous eruptions, by the redeposition and removal of these solids in an additional chamber.

(6) To submit the entire volume of liquid to the attracting influences of self-cleansing surfaces in order to abstract as large a proportion of the finer suspended and colloidal solids as possible; and

(7) To maintain continuously the predetermined capacities of the tank.

These principles were, in the main, secured by dividing the tank, which was in its lower part wedge-shaped in transverse section, into three compartments by a longitudinal arch-shaped division, this shape having been adopted for constructional reasons. This arch had openings at its springings and its crown for liquid communication. The outlet end of the tank had a level weir, which was divided by the arch, so as to apportion a definite width of weir to each of the compartments. The two lateral compartments or chambers were devoted to sedimentation, and the central to sludge reduction, the wedge-shaped portion being for sludge collection, and for its removal.

The cross-section of the hydrolytic tank was so admirable for facilitating rapid deposition and easy removal of solids in suspension that it had been adopted in the Norwich scheme for the detritus tanks.

The reduction chamber would be the recipient of the concentrated sewage, and would have the rate of flow of its liquid contents diminished to one-third of that in the sedimentation chambers, in order that the suspended matters might be deposited into its lower part, or sludge space. Whilst depositing its solids the liquid would flow

forwards and upwards to the weir, over which it would on an average pass in twelve hours after it had entered the chamber.

The action occurring therein would be a modified form of septic tank operation.

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Dr. Travis explained that there was no difference in the colloidal particles in the sewage for either the fine or the gross substances. It was just as necessary to remove them from the sewage as the gross particles, and removal must take place before the sewage could be purified. They had established in the research laboratory at Hampton that they could convert the gross matter into colloidal matter by agitation. The method of removal of that colloidal matter was by bringing it into contact with surfaces.

Mr. S. Chambers (Hampton-on-Thames) proposed a vote of thanks to Mr. Collins for his paper, which was seconded by the Chairman.

Mr. E. J. Silcock (Leeds) said he regarded the principle involved in these tanks as of importance in the separation of the solid from the liquid matter of sewage, and they looked forward to the results with great hopes that they would be successful. The principle was to submit the sewage to the largest amount of surfaces that could be presented to it, so that attraction should take place between those surfaces and the extensive minute particles in suspension: That was a principle which had not been recognised before, and the way in which it was carried out seemed to be an admirable one:

Mr. H. W. Taylor (Newcastle-on-Tyne), Mr. G. A. Hart (Leeds), Mr. Burton (Stoke-on-Trent), Mr. Ault (Westminster), and others took part in the discussion.

The remainder of the day was occupied with visits to the sewage works, where the making of the "Bonna" reinforced concrete pipes was seen in operation.

The members were entertained to luncheon by the Sewerage Committee.

## Competition.

TIVERTON SCHOOLS COMPETITION.—Mr. C. Harrison Townsend, F.R.I.B.A., has been appointed assessor in the competition for new secondary schools at Tiverton, Devon.

## Books.

*Crosby Place.* By PHILIP NORMAN, F.S.A., LL.D., with an Architectural Description by W. D. CARÖE, F.S.A. Being the Ninth Monograph of the Committee for the Survey of the Memorials of Greater London.

IT is a curious feature of the XXth century that while there seems to be an increasing desire to obtain accurate records of the monuments of our past, our proneness to destroy them appears to be very little abated. It might have been hoped that by this time the nation had learned to appreciate at their proper value the ever-decreasing number of architectural remains of former ages in its possession; but every now and then some ruthless act of vandalism, like the destruction of Crosby Hall, serves to remind us how very superficial our appreciation of them really is. Gallant as were the efforts made by a section of the public to preserve it, they were powerless in the face of commercial cupidity.

The carefully-compiled and admirably-illustrated monograph, issued by the above-named committee, is a model of what such records should be. The general account by Mr. Philip Norman furnishes a scholarly and interesting survey of its history and that of its occupants. It would appear from indisputable evidence that Sir Thomas More did not possess the property for more than a few months. He purchased the lease from the executors of Sir John Rest in June, 1523, and disposed of it in January, 1524, to Antonio Bonvisi; "his entire friend, Mr. Antony Bonvise," as Cresacre More calls him.

The conjectural general plan, Plate 18, shows very clearly the probable original extent of the buildings, of which the actual Hall was the only practically untouched portion of Sir John Crosby's mansion. The wing containing the Council Chamber and the Great Parlour dated from E. L. Blackburn's restoration of 1836, parts of the original walls being incorporated.

A curious point of construction is touched upon by Mr. Carõe in his Architectural Description. The feet of the moulded roof-principals of the Hall, where left in their original state, rested upon a piece of deerskin, with the hair still upon it laid upon a flat piece of iron, resting on, but not let into, the supporting stone corbels. The whole arrangement evidently fulfilled the functions of a movable joint.

The illustrations include Nash's fine drawings, published in Wilkinson's "Londina Illustrata"; plan and section from Britton's "Architectural Antiquities"; some details from Pugin's "Specimens" (whom we were sorry to find very seriously in the wrong in his drawings of the Oriel); and a very fine series of measured drawings by Mr. A. Christopher Goulder, now very valuable, as their original has passed into the army of buildings that have been.

Altogether it will be generally acknowledged that this monograph forms the standard work upon the subject.

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*Old Cottages and Farmhouses in Surrey:* Illustrated on one hundred collotype plates from photographs specially taken by W. GALSWORTHY DAVIE. With an introduction and numerous sketches by W. CURTIS GREEN, A.R.I.B.A. (London: B. T. Batsford. 21s. net.)

THE spontaneous vigour of design which characterised our farmhouses and cottages down till the latter end of the XVIIIth century has within recent years attracted the attention of many architects, who have seen in them qualities which our more scientific age has altogether failed to produce. As usual in architecture, admiration has led to imitation, with the result that the past decade has seen the home counties covered by a mushroom growth of week-end cottages redolent of that ostentatious simplicity which is one of the most peculiar features of present-day life. The old craftsmen who were responsible for the erection of the charming old Surrey cottages were quite unconscious that their work would ever possess an æsthetic value to future generations; their aim was simply to produce a sound and serviceable house, working on the lines handed down to them by their fathers. With buildings produced in this spirit the self-conscious XXth century cottage has nothing in common; the difference is just that between, say, Old London at Staple Inn and Old London at Earl's Court.

This point is very forcibly driven home by the admirable series of photographs by Mr. Galsworthy Davie of old farmhouses and cottages in Surrey prefaced by an introduction and sketches by Mr. Curtis Green, who touches upon the most salient features of what we may call the Surrey Vernacular style, tracing it from the early Post and Pan type of framed timber construction, filled in with wattle and daub, down to the final brick phase. With the XIXth century the thread of tradition was snapped, and can never be taken up again with any success, inasmuch as it is no longer the expression of the needs of the class for whom these cottages were built, but the whim of those of the wealthier classes who affect a rustic simplicity which in reality exists only on the surface. Slavish imitation apart, many valuable lessons have been learnt from a careful examination of these ever-diminishing relics of the past; the superiority, for instance, of local material, hand-wrought, over the machine-made, imported "article," a point well brought out by Mr. Curtis Green. The text is illustrated by many excellent sketches of detail, including specimens of furniture and metalwork still extant, notably a fine drawing of the sign of the "White Hart" at Bletchingley. The photographs are exceedingly good on the whole; one or two strike us as a trifle flat, a defect, perhaps, due rather to the subjects than to faults in manipulation. As a source of inspiration, but not as a pattern-book, this photographic record should prove of great use to architects.

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*Modern Practical Joinery: A Treatise on the Practice of Joiners' Work by Hand and Machine.* By GEORGE ELLIS. 1,200 illustrations. (London: Batsford. 1908. Third edition.)

THE first edition of this important treatise upon modern joinery appeared six years ago. A subject of this importance to our readers, treated in a comprehensive and conscientious way, called for more than passing comment, and it formed the subject of a leading article in our issue of November 22, 1902. On July 29, 1907, we had occasion to notice in a similar manner a second work of Mr. George Ellis's upon the kindred craft of modern carpentry. These two books are the most up-to-date and exhaustive works upon the subjects yet published. The text and the illustrations of that now under notice probably cover every operation of the complex and highly developed trade as practised and taught in the best workshops in this country. The scope and intricacy of the subject need not, however, bewilder either the trade apprentice or the student of architecture; each operation becomes intelligible after mastering the earlier chapters dealing with the elementary stages of the subject; even those chapters upon handrailing in double curvature only require a sound grounding in geometry and some knowledge of the interpenetration of solids to be easily grasped. Indeed, this chapter is only one more evidence of how without such grounding the student will always be hampered and the architect restricted in expressing himself in his design, limitations more serious even than a lack of facility with the pencil.

It is well known that a joiner's training is the best equipment for that of general builder's foreman or clerk of works; it will not surprise those who carefully study Mr. Ellis's book. There is probably no trade in the country requiring more general intelligence or more specialised knowledge than that of the joiner's. We need not again refer in detail to the contents of the book before us in this edition; nearly every chapter has some new information or illustrations, and the glossary and index have been extended. There are three entirely new chapters dealing with the use and application of machinery, entitled "Joinery Machines," "Machine Shop Practice and Methods of Using Machines," and on "Preparation of Work for Machinery." These additional chapters were inevitable, though it is quite impossible to get much information about machinery without seeing the machine in action. Nevertheless, the chapters are valuable from the point of view from which the book has been compiled. In respect of thoroughness of treatment, conciseness, and clearness of style and illustration, it is a model text-book, and one upon which the author and publisher alike are to be congratulated; it will, no doubt, for a long time hold a high place among works of its class. The point of view is indeed the only one to its disadvantage, and which must inevitably consign it to the oblivion which in the long run descends upon every decadent period of the crafts. That is perhaps more the author's misfortune than his fault. What has yet to be written is a treatise upon carpentry and joinery which will do more than describe the present accepted operations of the workshop. To the practical must be added the historic and philosophic side, that outlook on the subject which will transform a trade into an art and bring to life the pleasure once experienced both by the joiner and by the

public in the furniture and permanent woodwork of our houses or public buildings. Such a work would have something, too, to say about the machine. It is generally recognised now that the decadence of architecture and the lesser arts dates from the introduction of the machine and of the present factory system of production. The machine has come to stop, but its place in life has yet to be clearly defined, and to none of the crafts is the question of more importance than to that of the worker in wood.

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*Brickwork and Masonry.* By CHARLES F. MITCHELL, Lecturer on Building Construction to the Regent-street Polytechnic, assisted by GEORGE A. MITCHELL. Second edition, revised and enlarged, with about 700 illustrations. (London: B. T. Batsford. 1908.)

ALTHOUGH, so far as concerns the main bulk of the matter contained in the original edition, this excellent text-book exhibited little need for revision, the author, availing himself of the opportunity afforded by the necessity for a second edition, has remodelled some parts and amplified others.

Architects are not often called upon to consider the question of road construction in relation to motor traffic. Consequently some of the new matter in the chapter on "Roads" may not appeal to them. But it must be remembered that municipal engineers, in whose province road-making chiefly lies, are also interested in brickwork and masonry. Therefore the amplification of the chapter to which we refer will doubtless be appreciated by many of the author's readers.

The new chapter on "Reinforced Concrete" is of general interest, and gives as good a summary of so wide a subject as can be expected within the brief limits of space available.

Among other new features in the work we notice a copy of the revised British Standard specification for Portland cement, and many additional illustrations.

In its present form the book is more useful than ever to students, builders, and architects.

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## BOOKS RECEIVED.

SCREENS AND GALLERIES IN ENGLISH CHURCHES. By Francis Bond, M.A. Illustrated by Photographs and Measured Drawings. (London: Henry Frowde. 6s. net.)

BARONIAL AND ECCLESIASTICAL ANTIQUITIES OF SCOTLAND. By R. W. Billings. Edited by A. W. Wiston-Glynn, M.A. In about twenty parts, illustrated. Parts I. to IV. (Edinburgh: E. Saunders & Co. Issued monthly, 1s. each part.)

MANUAL OF REINFORCED CONCRETE AND CONCRETE BLOCK CONSTRUCTION. By C. F. Marsh, M.Inst.C.E., and W. Dunn, F.R.I.B.A. (London: Archibald Constable & Co., Ltd. 7s. 6d. net.)

# The Student's Column.

## REINFORCED CONCRETE BEAM. FORMULÆ.—XIX.

### T-BEAMS WITH DOUBLE REINFORCEMENT (*concluded*).

(69.) *Formulæ for Class II.: Neutral axis below the under surface of the flange.*

For the reasons stated in Section (64) some of the formulæ for beams of this class (see Fig. 30) differ from the corresponding formulæ for beams of Class I.

In the following equations we neglect the compressive resistance of the concrete in the web area between the under surface of the flange and the neutral axis.

As before

$$x = \frac{1}{1 + \frac{t_s}{c_c m}} \quad \ldots\ldots\ldots \quad (68)$$

$$c_c = t_s \frac{x}{(1-x)\,m} \quad \ldots\ldots\ldots \quad (69)$$

$$t_s = c_c \frac{(1-x)\,m}{x} \quad \ldots\ldots\ldots \quad (70)$$

$$c_s = c_c \frac{(x-u)\,m}{x} \quad \ldots\ldots\ldots \quad (71)$$

$$c_s = t_s \frac{(x-u)}{(1-x)} \quad \ldots\ldots\ldots \quad (72)$$

For the ratios of reinforcement in tension and compression, we have—

$$\rho_t = \frac{xv\left(1-\frac{v}{2x}\right)}{m\,(1-x)} \cdot \frac{b_1}{b} + \rho_c \frac{(x-u)}{(1-x)} \quad \ldots \quad (73)$$

and

$$\rho_c = \frac{m\rho_t\,(1-x)\,b - xv\left(1-\frac{v}{2x}\right)b_1}{m\,(x-u)\,b} \quad \ldots \quad (74)$$

Whence

$$x = \frac{v^2 b_1 + 2m\,(\rho_t + \rho_c u)\,b}{2vb_1 + 2m\,(\rho_t + \rho_c)\,b} \quad \ldots\ldots \quad (75)$$

*Taking moments about the centre of tension in the steel.*

$$M_r = h^2\left[\left(1-\frac{v}{2x}\right)c_c v b_1\left(1-\frac{3xv-2v^2}{6x-3v}\right) + c_s\rho_c\,(1-u)\,b\right] \quad (76)$$

*Taking moments about the centre of compression in the steel.*

$$M_r = h^2\left[t_s\rho_t\,(1-u)\,b - \left(1-\frac{v}{2x}\right)c_c v b_1\left(\frac{3xv-2v^2}{6x-3v}-u\right)\right] \quad (77)$$

*Taking moments about the centre of compression in the concrete.*

$$M_r = bh^2\left[t_s\rho_t\left(1-\frac{3xv-2v^2}{6x-3v}\right) + c_s\rho_c\left(\frac{3xv-2v^2}{6x-3v}-u\right)\right] \quad (78)$$

By placing the compression reinforcement so that its centre of gravity coincides with the centre of compression in the concrete, or $u = \dfrac{3xv-2v^2}{6x-3v}$, (76) can be simplified, and the last term in (77) and (78) is not required.

Then we can write—

$$M_r = h^2\left[\left\{\left(1-\frac{v}{2x}\right)c_c v b_1 + c_s\rho_c b\right\}\left(1-\frac{3xv-2v^2}{6x-3v}\right)\right] \quad (76a)$$

$$M_r = bh^2\left[t_s\rho_t\left(1-\frac{3xv-2v^2}{6x-3v}\right)\right] \quad \ldots\ldots \quad (77a)$$

$$M_r = bh^2\left[t_s\rho_t\left(1-\frac{3xv-2v^2}{6x-3v}\right)\right] \quad \ldots\ldots \quad (78a)$$

Again, by inserting values of $\rho_t$ and $\rho_c$ calculated for the ratio $\dfrac{b_1}{b} = 1$, we can write formulæ (76), (77), and (78)—

$$M_r = b_1h^2\left[\left(1-\frac{v}{2x}\right)c_c v\left(1-\frac{3xv-2v^2}{6x-3v}\right) + c_s\rho_c\,(1-u)\right] \quad (76b)$$

$$M_r = b_1h^2\left[t_s\rho_t\,(1-u) - \left(1-\frac{v}{2x}\right)c_c v\left(\frac{3xv-2v^2}{6x-3v}-u\right)\right] \quad (77b)$$

$$M_r = b_1h^2\left[t_s\rho_t\left(1-\frac{3xv-2v^2}{6x-3v}\right) + c_s\rho_c\left(\frac{3xv-2v^2}{6x-3v}-u\right)\right] \quad (78b)$$

Formulæ (76a), (77a), and (78a) can be similarly modified to suit values of $\rho_t$ and $\rho_c$ for the ratio $\dfrac{b_1}{b} = 1$.

Formulæ for T-beams of Class II. with double reinforcement are necessarily somewhat complicated, and do not lend themselves very readily to the preparation of labour-saving tables and diagrams. This point is made clear by considering that three important factors can be varied at will, while other factors remain constant.

Thus, the depth of the compression reinforcement from the top of the beam may be anything between 0 and the depth of the neutral axis, the width and depth of the flange can be similarly varied, and the relation of $\rho_t$ to $\rho_c$ can be whatever the designer may choose within reasonable limits.

Consequently, the ratios $u$, $\dfrac{b_1}{b}$, $v$, and $\rho_t : \rho_c$ are all variable, even under conditions where factors such as $c_c$, $t_s$, and $m$ are constant.

Let us now see how the difficulties in the way of preparing diagrams for $x$ and $K$ may be best got over.

In the first place, we can settle the relative depth of the compression reinforcement by making $u = \left(\dfrac{3xv-2v^2}{6x-3v}\right)$—when the centre of gravity of the metal will be coincident with the centre of compression in the concrete—or by making $u = 0{\cdot}1$—when the centre of gravity of the compression reinforcement will bear a constant relation to the effective depth $h$ of the beam.

Next, we can calculate values for the ratio $\dfrac{b_1}{b} = 1$ and so obviate the trouble caused by variations of the flange width.

Then to provide for various flange depths, curves can be calculated as in Figs. 27 and 28 for relations such as $v = {\cdot}3x$, $v = {\cdot}4x$, $v = {\cdot}5x$, and so on; and, finally, curves can be calculated similar to those in Figs. 23 and 24 for relations such as $\rho_c = \rho_t$, $\rho_c = \frac{3}{4}\rho_t$, $\rho_c = \frac{1}{2}\rho_t$, and $\rho_c = \frac{1}{4}\rho_t$.

The result is that curves have to be plotted for only two instead of four variable factors, but for each ratio of $\rho_t : \rho_c$, several curves must be calculated so as to suit different flange depths.

Hence for the relation $\rho_c = \rho_t$ we should want curves for $v = {\cdot}3x$, $v = {\cdot}4x$, $v = {\cdot}5x$, and so on, and for each of the relations $\rho_c = \frac{3}{4}\rho_t$, $\rho_c = \frac{1}{2}\rho_t$, $\rho_c = \frac{1}{4}\rho_t$, there would be the same variety of curves for $v$.

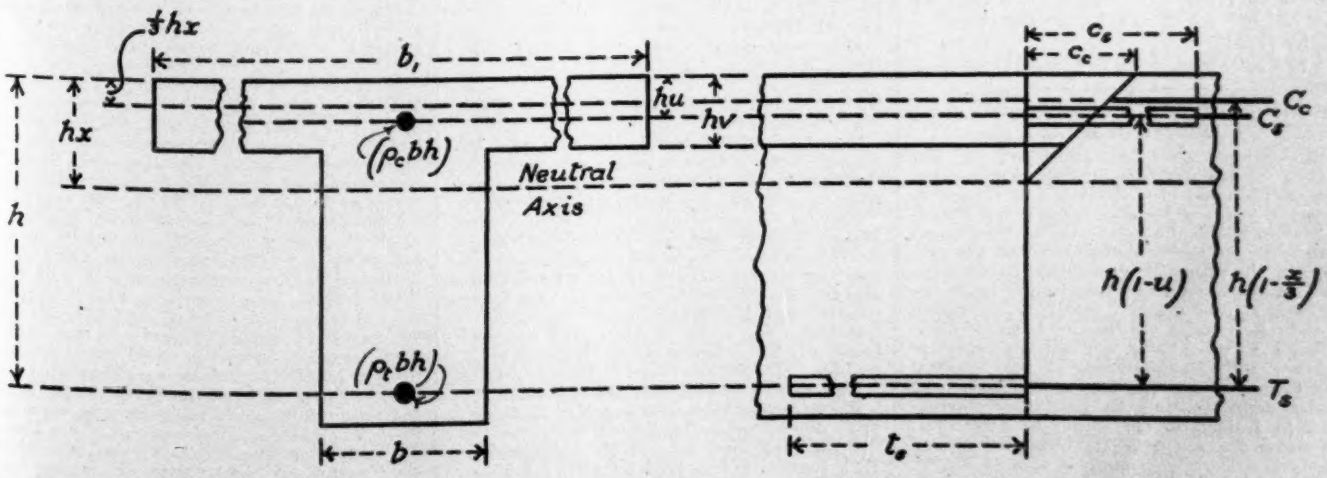


FIG. 30.

No difficulty is presented by calculation of the curves, but to make the diagram of practical utility it should be drawn to fairly large scale. We have not reproduced a diagram of the kind as an illustration to this article because when reduced to the small size necessitated by the demands upon available space in our columns the numerous curves would be almost unintelligible.

Having diagrams prepared as described above, T-beams of Class II. can be calculated by formula (67):

$$M_r = b_1 h^2 K$$

and the simple working rules summarised in Table XV. can be employed by substitution of $b_1$ for $b$, as explained in Section (64).

(70.) *Practical Application of Formulæ* (68) to (78*b*).

*Example* (39).—Find values of $\rho_c$ and $M_r$ for a beam where $b = 10$ in., $b_1 = 40$ in., $h = 18$ in., $c_c = 500$ lb. per square inch, the permissible stresses $t_s$ and $c_s = 15{,}000$ lb. per square inch, $m = 15$, and $\rho_t = 0{\cdot}03$.

The ratio $\rho_c$ to be such that the value of $x$ shall be that given by formula (68) and the position of the compression reinforcement to be such that $u = 0{\cdot}1$. The depth of the flange to be 4 in., or $v = (4 \div 18) = 0{\cdot}\dot{2}$.

By (68) $x = 0{\cdot}\dot{3}$; by (70) $t_s = 15{,}000$ lb. per square inch; and by (71) and (72) $c_s = 5{,}250$ lb. per square inch.

By (74)

$$\rho_c = \frac{15 \times {\cdot}03 \times {\cdot}\dot{6} \times 10 - \dot{3} \times {\cdot}\dot{2} \times {\cdot}6 \times 40}{15\,(\dot{3} - 1)\,10} = 0{\cdot}02928$$

Proof of $\rho_c$ by (73)

$$\rho_t = \frac{{\cdot}\dot{3} \times {\cdot}\dot{2} \times {\cdot}\dot{6}}{15 \times {\cdot}6} \cdot \frac{40}{10} + {\cdot}02928\,\frac{(\dot{3} - 1)}{{\cdot}\dot{6}} = 0{\cdot}03$$

Proof of $x$ by (75)

$$x = \frac{{\cdot}\dot{2}^2 \times 40 + 2 \times 15\,({\cdot}03 + {\cdot}02928 \times {\cdot}1)\,10}{2 \times {\cdot}\dot{2} \times 40 + 2 \times 15\,({\cdot}03 + {\cdot}02928)\,10} = 0{\cdot}\dot{3}$$

By (76)

$M_r = 18^2\,[2962 \times {\cdot}9074 + 1538 \times {\cdot}9] = 1{,}320{,}000$ inch-pounds.

By (76b) taking $\rho_c$ at 0·00732 for $\frac{b_1}{b} = 1$

$M_r = 40 \times 18^2\,[74{\cdot}074 \times {\cdot}9074 + 38{\cdot}42 \times {\cdot}9] = 1{,}320{,}000$ inch-pounds.

By (77)

$M_r = 18^2\,[4500 \times {\cdot}9 - 2962\ (= {\cdot}0074)] = 1{,}320{,}000$ inch-pounds.

By (77b) taking $\rho_t$ at 0·0075 for $\frac{b_1}{b} = 1$

$M_r = 40 \times 18^2\,[112{\cdot}5 \times {\cdot}9 - 74{\cdot}074\ (- {\cdot}0074)] = 1{,}320{,}000$ inch-pounds.

The same result is given by formulæ (78) and (78b).

*Example* (40).—Find $M_r$ for a beam of the dimensions and for the permissible stresses stated in Example (38) but with the compression reinforcement placed so that $u = \dfrac{3xv - 2v^2}{6x - 3v}$, which as calculated in Example (38) gives $u = 0{\cdot}0927$ and $1 - u = 0{\cdot}9$. Take $\rho_t = 0{\cdot}03$ and calculate $\rho_c$ so that $x = 0{\cdot}\dot{3}$.

By (74) $\rho_c = 0{\cdot}0284$; and for the stated position of the compression reinforcement we get by (71) and (72) $c_s = 5{,}415$ lb. per square inch.

Then by (76a)

$M_r = 18^2\,[(2962 + 1538) \cdot 9] = 1{,}322{,}000$ inch-pounds,

and by (77a)

$M_r = 10 \times 18^2\,[15000 \times {\cdot}03 \times {\cdot}9] = 1{,}322{,}000$ inch-pounds.

## HOUSING OF THE WORKING CLASSES (IRELAND) BILL.

On Tuesday this Bill, presented by Mr. Hogan, to provide further facilities for the erection of houses for the working classes in cities and towns in Ireland, came before Standing Committee A, presided over by Sir Francis Channing. At the commencement of the proceedings the promoter stated that by arrangement clauses 1 and 6 had been struck out of the Bill, and clauses 5 and 7 would be postponed till the report stage was reached in the House.

Clause 1, which was omitted, proposed to empower the Commissioners of the National Debt to make loans for housing purposes from monies deposited in the Post-office Savings Bank in Ireland to the extent of 5,000,000*l.*; and clause 6 to authorise the Commissioners of Woods and Forests to apply a sum of 25,000*l.* a year from their revenues for purposes of the Housing of the Working Classes Acts in Ireland.

The suspended clause 5 provided for the application of the dormant portion of the Irish Suitors Fund to purposes of the Housing Acts, and this fund by sect. 7 was to be known as the Irish Housing Fund.

Mr. John Redmond explained that the reason for suspending the clauses was that the Treasury might consider the question of putting a specified sum in the Act.

The other clauses of the Bill were then gone through and amended in some minor particulars. Clause 2 provides that the maximum period which may be sanctioned as the period for which money may be borrowed by a local authority for housing purposes shall be eighty years, and the local authority is not to be required to pay off any of the loan within the first two years of the borrowing. Clause 4 gives the local authority power to reborrow to pay off a loan. Under a new clause inserted for clause 8 it will be enacted that an order of the Local Government Board sanctioning improvement and construction schemes can take effect without the confirmation of Parliament. By clause 10 local authorities are authorised to lease lands for building houses for the working classes, and they may, by a subsequent clause, remit or rebate rates in respect of working-class dwellings for a period not exceeding ten years. A new clause moved by Mr. Cleary gives local authorities power to appropriate any land held by them for building working-class dwellings, and to accept any donation of land or money for that purpose.

The Bill was ordered to be reported to the House.

## PROPOSED NEW BUILDINGS IN LONDON AND SUBURBS.

Parish hall in Shernhall-street, Walthamstow. Mr. W. A. Lewis, architect, 11-12, Finsbury-square, E.C.

Three houses, Woodstock-road, Walthamstow. Messrs. W. Silk & Son, builders, 13, High-street, Homerton.

Classrooms in Church Hill-road, Walthamstow. Mr. C. W. Hodgson, architect, 153, St. John's-road, Walthamstow.

Four houses in Hillcrest-road, Walthamstow. Mr. A. Attwell, Walthamstow.

East Ham.—Twenty-three houses, Central Park-road, Messrs. J. & T. Reid; enlargement of No. 26, High-street North, Mr. F. J. Bowhill; extension to No. 5, The Parade, Aldersbrook-road, Mr. F. J. Harding.

Seven houses, Dames-road, Leyton. Mr. R. Martin Banks, architect, 121, Plashet-grove, Upton Park, E.

Five houses, Hainault-road, Leyton. Mr. R. Grimes, builder, 83, Wallwood-road, Leytonstone.

Factory in Church-road, Leyton. Mr. A. W. Hudson, architect, 87, Finsbury-pavement.

Two vicarages, Leyton. Messrs. Mattock & Parsons, builders, 165, Gray's Inn-road, W.C.

Additions to Holy Trinity Church, Leyton. Mr. W. J. Maddison, builder, St. Joseph's R.C. School, Highgate, N.

Additional accommodation at Leyton Town Hall (8,600*l.*). Messrs. Newman & Jacques, architects, 2, Fen-court, Fenchurch-street, E.C.

Proposed Constitutional Club at Kingston-on-Thames. Mr. George Cave, M.P., President, Wardrobe Court, Richmond; Mr. B. Billcliffe, Secretary, Kingston.

Eleven houses in Ridgdale-street, Poplar. Mr. Edwin Evans, agent, 255, Lavender-hill, S.W.

Factory at Poplar for Messrs. Waterlow & Sons, Ltd. Messrs. Walter Lawrence & Sons, builders, Canal Works, Waltham Cross.

Shops, etc., at corner of Edgware-road and Maida-hill West, W. Mr. F. W. Foster, architect, 41, Bedford-row, W.C.

Music-hall on site adjoining King's Arms Hotel, Hounslow.

Group of schools in Tavistock-grove, Croydon (12,000*l.*). Mr. Walter Wallis, 207-209, High-road, Balham, S.W.

Bexley.—Nine houses, Rowan-road, Mr. Alfred Clark; eleven houses, Park View-road, Welling, Mr. H. A. Roberts; five houses, Days-lane, etc., Mr. E. S. Curram.

Hendon.—Four houses in Radnor-road, Messrs. F. & W. Bettesworth, builders, 15 and 16, Hindes-road, Harrow; seven houses, Cunningham Park-road, Mr. D. Jones; six houses, Headstone, Mr. G. M. Kenyon; two houses, Garratt-road, Mr. W. G. Fuller.

Premises for National Telephone Company, Deptford, S.E. Messrs. C. P. Roberts & Co., builders, 138, St. Paul's-road, N.

New theatre and hippodrome at Watford.

Eight houses at Epsom for Mr. T. Hersey, cycle and motor works, Epsom.

Rebuilding Nos. 35 and 36, Aldermanbury, E.C. (partially destroyed by fire), for Messrs. S. Guiterman & Co., Ltd., American merchants.

New school building, Aldgate, E. (24,000*l.*). Mr. A. W. Cooksey, architect, 5, Adam-street, W.C.

Wandsworth.—Twelve houses in Becmead-avenue, Streatham, Messrs. Holliday & Stanger, agents, 227, Streatham High-road, S.W.; laundry and mortuary at Home for Aged Jews, Balham, Mr. G. W. Beale, builder, 505A, Cambridge-road, N.E.; five houses and stable, Southfield, Messrs. Woodley Brothers, Woodhouse, Wimbledon-road, Tooting Graveney, S.W.; house, Bective-road, Southfield, Mr. S. S. Witton, builder, 148, Upper Richmond-road, Putney, S.W.; clubhouse, Balham, Mr. W. Bartholomew; seven houses, Streatham, Messrs. Ellyatt & Porter; fourteen houses, Streatham, Messrs. C. Bridle; workshop, Garratt-lane, Mr. J. Warwick; eight houses, Southfield, Messrs. W. Mulliner & Sons; sixteen houses, Roehampton-lane, Putney, Mr. C. J. Kerven; Baptist Sunday-school, Mr. T. H. Smith.

Building on site of 40, Artillery-lane, Stepney. Mr. W. A. Lewis, architect, 11-12, Finsbury-square, E.C.

Building for Messrs. J. Smith & Co., 290-292, Cable-street, E., tarpaulin manufacturers.

Shops in Kensington High-street, W. Messrs. Ashby Brothers, builders, 6, Union-court, Old Broad-street, E.C.

Factory buildings in Wyfold-road, Fulham. Messrs. J. A. J. Keynes, architect, 60-64, Brompton-road, S.W.

Development of Forster Estate, Catford. Mr. J. Everington, surveyor, 31, Bromley-road, Catford.

Additions to shop in Artillery-street, Bermondsey. Messrs. W. E. Hill & Son, builders, 48, Borough High-street, S.E.

Rebuilding Yorkshire Grey public-house, Bermondsey. Messrs. L. Whitehead & Co., builders, Clapham-road.

Factory for Messrs. R. Blackie, manufacturing chemists, at Bermondsey. Messrs. Barlow & Roberts, builders, 14, Red Cross-street, S.E.

Two houses, Baring-road, Lewisham. Mr. A. Durbin, builder, Grove-park, S.E.

Twelve houses, Muirkirk-road, Lewisham. Messrs. Norfolk & Prior, architects, Catford.

Building in Irongate Wharf-road, Paddington. Messrs. Forsyth & Maule, architects, 15, Great Marlborough-street, W.

Proposed Extensions to the Town Hall, Leyton.—A short time ago the Leyton District Council appointed a special committee to inquire into the question of providing additional office accommodation at the town hall building. The committee have now completed their report, and state that they instructed Mr. Jacques to consider the matter, in conjunction with the Surveyor, and to prepare sketch plans showing how the additional accommodation required could be best provided. They have now received and considered these sketch plans, which they approve, and recommend that the architect be instructed to prepare detailed plans, specifications, and estimates for submission to the Local Government Board. The estimated cost of the erection of the additional accommodation, including provision of heating apparatus and electric wiring and fittings, but excluding furnishing, will be 8,600*l.* The Council has adopted the report.

Hunt *v.* Acton District Council.—A special meeting of the Acton Urban District Council was held on May 27 to consider what action should be taken in regard to the case of Hunt *v.* the Council, in which judgment had been given the previous week by Mr. Justice Lawrence for the plaintiff for 800*l.* and costs. It was then arranged to pay 400*l.* into court pending the consideration of an appeal. Mr. Hemlsey, the Council's solicitor, was in attendance. After some discussion in regard to the conduct of the case, Mr. Schultess Young moved that the Council instruct its legal advisers to take such steps as they might deem necessary in the best interests of the ratepayers. Mr. Parkinson seconded the motion. Mr. Hunt (Councillor) said the real question was whether they should or should not appeal. If they did appeal they would be embarking upon costly litigation, because, even if they succeeded next time, Mr. Hunt (the plaintiff) would go to the House of Lords. He moved as an amendment that the solicitor be instructed to ask the plaintiff whether he would accept judgment for 400*l.* and taxed costs. Mr. Shillaker supported the amendment, and said that if the Council went to the Court of Appeal it would be landed in 2,000*l.* costs. In the course of further discussion it was stated that the costs already incurred would amount to over 1,000*l.* Mr. Crane said that what had occurred had stiffened the backs of the Royal Institute of British Architects, who were behind Mr. Hunt, and he would go to the House of Lords; but even if the Council won there they would not like to crush this young professional man by making him pay a couple of thousands pounds in costs. After further discussion the amendment was carried by ten votes to four.

## Obituary.

SIR JOHN EVANS.—We regret to announce the death on May 30, at his residence, "Britwell," near Berkhamsted, of Sir John Evans, K.C.B., F.R.S., D.C.L., LL.D., and honorary Fellow of Brasenose College, Oxford, aged 84 years. Sir John Evans was connected during a long period with the firm of John Dickinson & Co., of Nash Mills, Hemel Hempstead, Herts, paper-makers; his name is perhaps more familiar to our readers as that of an eminent classical scholar, scientist, antiquary, and archæologist. He was elected President of the Numismatic Society in 1874, and held that office until his decease; he was President of the Geological Society, 1874-6, and Treasurer of the Royal Society, 1878-98, of which he formerly served as a vice-president. He was also a permanent trustee of the British Museum; President of the Society of Antiquaries, 1885-92; and President of the Institute of Chemical Industry, 1892-3, and of the Anthropological Institute, 1877-9. His papers upon "Flint Implements in the Drift," written for *Archæologia*, 1860-2, were succeeded by his "Coins of the Ancient Britons," 1864, his "Ancient Stone Implements, Weapons, and Ornaments of Great Britain," 1872 (with a second edition ten years ago), and "The Ancient Bronze Implements, Weapons, and Ornaments of Great Britain and Ireland," 1881. He was President of the British Association in 1897 (in Canada) and in 1898, and during many years of the Egypt Exploration Fund; and a past-chairman of the Midland Institute and the Royal Society of Arts. His elder son, Dr. Arthur J. Evans, is the distinguished explorer of antiquities in Knossos and Crete, and Keeper of the Ashmolean Museum, Oxford.

## General Building News.

CHURCH RESTORATION, ASHTON.—Works of restoration and improvement have been made to the parish church at Ashton. They comprise the restoration of the western end of the north aisle, and the erection of a porch to the church on the south side, this being a memorial to the late Mr. John Feeney, the proprietor of the *Birmingham Daily Post*. The work has been carried out under the direction of Messrs. J. A. Chatwin & Son, architects, of Birmingham. Messrs. J. Barnsley & Sons were the builders, and the carving is the work of Mr. R Bridgeman, of Lichfield. The restoration of the tower and spire is to be undertaken when funds are available, but a little work has had to be done at the base to secure the safety of the structure.

CHAPEL, SUNDERLAND.—A new chapel, which forms the most recent extension of the Little Sisters' Homes, High Barnes, Sunderland, has just been opened. The new chapel has accommodation for 200 people. The walls are of brick, with stone dressings. The contractors for the whole building (including the chapel) were Messrs. D. & J. Ranken, and the architects are Messrs. W. & T. R. Milburn, of Sunderland.

PRIMITIVE METHODIST CHAPEL, BILLINGFORD.—The foundation-stones have been laid of a new Primitive Methodist chapel at Billingford. The building will be of red brick, and is designed to accommodate about 100 persons. The architect is Mr. A. F. Scott, of Norwich, and the builder Mr. I. W. Fisher, of Hempton and Fakenham.

IMPROVEMENT TO SCHOOL BUILDINGS, BEDFORD.—Extensive additions and improvements have been made to the premises of the Bedford Modern School for Boys. The plans for the work were prepared by Mr. H. Young, architect to the Governing Body, and the work has been executed by Mr. Samuel Foster, for whom Mr. C. Larkin has acted as foreman.

SECONDARY SCHOOLS, BRIDGNORTH.—The Salop County Council are erecting new secondary schools at Bridgnorth. Accommodation will be afforded for 220 scholars. The exterior will be of red brick, with terra-cotta dressings and oak half-timber work, and roof of red Broseley tiles. The architects are Messrs. Pritchard & Pritchard, of Kidderminster, and Mr. J. T. Mason, of Stourbridge, is the contractor. The work is to cost 5,868*l*.

NEW SCHOOL FOR EARLSFIELD.—Notices have been served by the London County Council relating to the Council's intention to build a school to accommodate 800 children in the district of Littleton-street, Garrat-lane, the school to be available for the districts of Earlsfield and Summerstown.

COUNCIL SCHOOL ENLARGEMENT, BRADWELL.—Various additions are to be made to the Bradwell Council schools. Mr. G. H. Widdows, the County Architect, is preparing the necessary plans.

SIR JOHN CASS'S FOUNDATION.—The foundation-stone of the new school, which is being erected in Duke-street, Aldgate, in connexion with this foundation, was laid on the 26th ult. The site of the new building covers an area of 17,000 ft., and has a frontage of 141 ft. to Duke-street. Classroom accommodation will be provided for 500 children of both sexes, including infants, and there would be an assembly-hall, a manual-training room, a gymnasium, and a chemical laboratory. In addition, there would be a large dining-hall, and all the necessary kitchen accommodation for the preparation of midday dinners. Mr. A. W. Cooksey is the architect of the work, the cost of which will be about 24,000*l*.

EXTENSION OF CAMBERWELL ART SCHOOL.—Both the Works and the Public Libraries Committees of the Camberwell Borough Council have decided that permission be granted to the London County Council to use, for a period not exceeding two years (pending the completion of the extension of the present art school), land at the rear of the School of Arts and Crafts and South London Art Gallery, for temporary premises in connexion with the art school. The London County Council propose to erect on the site in question iron buildings for providing temporary accommodation, and another portion of land is to be utilised for building a permanent extension.

CHURCH HALL, HALTWHISTLE.—The foundation-stone has been laid of a new church hall at Haltwhistle. The plans by the architect, Mr. A. Hardgrave, provide for a building of stone, with accommodation for all classes of church work.

FEVER HOSPITAL, LOCHMABEN, N.B.—A new hospital has been erected about half a mile from Lochmaben to serve the county of Dumfriesshire. The buildings consist of an administrative block, with kitchen annexe, built of stone, and providing quarters for matron and eight nurses, three pavilions of corrugated iron for reception of scarlet fever, diphtheria, and typhoid fever cases respectively, and a laundry block. The pavilions and two observation or probationary wards provide accommodation for twenty-eight patients. Mr. Carruthers, architect, prepared the plans for the work.

DEVON AND CORNWALL SANATORIUM.—The Committee of the Devon and Cornwall Sanatorium for Consumptives have accepted the tender of Mr. D. Carwithin, Plymouth, for the erection of a house in place of the bungalow recently destroyed by fire. The plans of Mr. J. Leighton Fouracre were accepted out of five sets sent in competition.

POST-OFFICE, BROUGHTY FERRY, FORFAR.—The contractors have now virtually completed the new post-office at Broughty Ferry. Mr. W. T. Oldrieve, of the Office of Works, Edinburgh, is the architect, and Mr. Robert Bland, H.M. Office of Works, is clerk of works.

PROPOSED LIBRARY ADDITIONS, HAMPSTEAD.—Mr. W. O. E. Meade-King, M.Inst.C.E., Inspector of the Local Government Board, recently inquired into the application by the Hampstead Borough Council for sanction to borrow 1,500*l*. for the extension of the Central Library in Finchley-road. Mr. Arnold S. Tayler is the architect of the building.

HOTEL, WESTMINSTER, S.W.—A new residential hotel, to be called "Wellington House," is on the point of completion on an island site, with a frontage to Buckingham-gate of 174 ft., and to York-street of 143 ft. 6 in. The building, seven stories high, has taken nearly two years to erect, and is of a most elaborate description, both internally and externally, and will cost, including site, upwards of 100,000*l*. The elevations are carried out in red bricks, with enriched terra-cotta details, and modelling by Dennis, of Ruabon, and carving in gauged brickwork from full-size drawings by the architects, Messrs. Palgrave & Co. In six niches are the statuettes of George IV., Wellington, Nelson, Hood, Heathfield, and Picton. The main entrance is in marble, with wrought-iron and bronze panels, and the floor will be laid with blue and white marble squares. The general contractor is Mr. C. Gray, of Kensington and Shepherd's Bush. The special decorations and hardwood joinery are being carried out by Messrs. W. L. Radley & Co., Ltd., and the leaded and painted glass by Messrs. John Ball & Sons, Ltd. The building has its own complete telephone exchange, and is fireproof throughout. Mr. Henry Riley was the quantity surveyor.

WORKHOUSE WORKROOM AND LAUNDRY.—On Wednesday it was reported at the meeting of the Paddington Board of Guardians that the work in connexion with the workroom and the laundry at the workhouse had been completed. The original contract was 6,731*l*., but the Local Government Board sanctioned the expenditure of a further sum of 803*l*. for the provision of machinery, shelters, and clothes-stores. With other extras the total cost came to 8,730*l*. Mr. F. J. Smith was the architect, the contractors being Messrs. Dearing & Sons.——It is proposed to pull down the old workshops in connexion with the alterations in progress at the south block.——It was agreed to take steps to expedite the building of the Nurses' Home.

OFFICES, LONDON, S.W.—A block of offices, with residential, self-contained flats above, seven stories high, has just been completed, and occupying a frontage to Vauxhall Bridge-road—Victoria-street end—of 52 ft., to be known as "Ashley Mansions." The building is fireproof throughout. The elevation is carried out in red bricks, with gauged work in shafts, aprons, and arches, and modelled terra-cotta dressings by the Hathern Station Terra-cotta Company, Ltd. The building has been erected for the Central London Estates, Ltd., by Mr. C. Gray, and the architects were Messrs. Palgrave & Co., Westminster.

BANK PREMISES, NEATH.—New premises are to be erected by the Metropolitan Bank at Neath. They will be designed by Mr. Glendinning Moxham, architect, of Swansea.

PARISH HALL, BRISTOL.—The foundation and memorial stone of the new parish hall of Emmanuel Church, St. Philip's, was laid recently. The building consists of a large room for general meetings to accommodate 250 to 300 persons, classrooms, etc. The whole of the premises are heated by hot water. The architect of the new building is Mr. H. C. M. Hirst, and the builder Mr. Charles Hodges, of Chelsea Park, Lower Easton.

NEW HOSPITAL, STONE.—The foundation-stone has been laid of a new infectious diseases hospital at Yarnfield. The contractors are Messrs. C. Cornes & Son, Hanley, the contract price being 6,353*l*., to which has to be added nearly 1,000*l*. for machinery and boilers, and the architect is Mr. J. J. Chapman, Stone, whose plans were accepted in competition. The building consists of six blocks.

HOTEL ADDITIONS, PENZANCE.—Additions to Queen's Hotel, Penzance, have been carried out by Mr. Carkeek, of Redruth, with brick and Doulting stone from the Chelynch beds of the Ham Hill and Doulting Stone Company, Ltd. The architect was Mr. Oliver Caldwell, of Penzance.

ADDITIONS, STURRY COURT, NEAR CANTERBURY.—Additions to Sturry Court, near Canterbury, the residence of Lord Milner, have been carried out from the designs of Mr. Reginald Blomfield, A.R.A., of London. Portland stone was used from the quarries of the Ham Hill and Doulting Stone Company, Ltd., and the builder was Mr. Adcock, of Canterbury.

MUNICIPAL BUILDINGS, REDDISH.—The new baths, fire-station, and free library which have been erected by the Stockport Corporation at Reddish were opened on the 27th ult. The buildings have cost 7,400*l*., and were designed by Messrs. Dixon & Potter, of Manchester, and built by Messrs. Burgess & Galt.

PUBLIC LIBRARY, HACKNEY.—On the 29th ult. the new Hackney Central Library was opened by the Prince and Princess of Wales. The site for the library was purchased by the Borough Council at a cost of 3,000*l*. from the London County Council, and forms part of the surplus land resulting from the widening and improvement of Mare-street. Competitive plans were invited by the Council, and were adjudicated upon by Mr. John W. Simpson, who awarded Mr. Henry A. Crouch the first premium. Mr. Crouch was subsequently retained by the Council to supervise the erection of the library. The building is faced with Ancaster stone and red brick, and is planned for the indicator system of book issue. Quarters for a caretaker are placed at the top of the building. Accommodation is obtained for the storage of 60,000 volumes and for the exhibition of forty newspapers and 140 magazines and periodicals. The building is of fireproof construction, is heated throughout by electricity. Mechanical in addition to natural ventilation is provided by means of flues and exhaust fans. The building has been erected by Messrs. N. Fortescue & Sons, Ltd., of Hackney.

CHELSEA TOWN HALL.—The additions which are being made to the offices of the Chelsea Borough Council, from the designs of Mr. Leonard Stokes, are nearing completion. The contract is being carried out by Mr. Coles, of Plymouth, the contract price being about 21,000*l*.

NURSES' HOME, LIVERPOOL.—The Committee of the Liverpool Infirmary for Children have opened a Nurses' Home in Mulberry-street, Liverpool. The new building provides accommodation for six sisters and twenty-two nurses. The architects were Messrs. Haigh & Thompson, and the cost, roughly, 3,000*l*., with an additional 750*l*. for the furnishing.

PAROCHIAL HALL, WALTON, LANCS. — A parochial hall is being erected in connexion with the Church of St. Luke the Evangelist, Walton. The cost of the building will be nearly 2,000*l*. Messrs. Haugh & Pilling, of Liverpool, are the contractors, and the architect is Mr. J. H. Havelock-Sutton, of Liverpool and Formby.

## Sanitary and Engineering News.

THE ROYAL SANITARY INSTITUTE.—An an examination in Sanitary Science as applied to Buildings and Public Works, held in London on May 22 and 23, thirty-two candidates presented themselves, and the following eleven candidates were granted certificates:—M. B. Bennett (Brighton); Wm. A. Brown (Norbury); F. R. Farrer (London); W. W. Harrington (London); H. T. Hooper (Thornton Heath); J. G. Jones (Wandsworth); R. C. Khosla (Upper Norwood); M. W. Kinch (Acton); W. J. C. Rogers (Southend); S. A. Self (Tufnell Park); and J. W. Wood (Chiswick).

SEWAGE DISPOSAL SCHEME, LEPTON.—At Lepton, Huddersfield, on the 26th ult., Mr. A. A. G. Malet, C.E., Inspector of the Local Government Board, held an inquiry in reference to the application of the Urban District Council of Lepton for sanction to borrow 6,500*l.* for the construction of works of sewerage and sewage disposal. Mr. J. S. Dyson, the Engineer, Huddersfield, gave details of the scheme, and said the estimated consumption of water was 20 gallons per head per day, and there were effluents from two works of 10,000 and 60,000 gallons a day respectively. These trade wastes would not be connected with the Council's sewers. The present scheme was intended to deal with domestic sewage principally.

SEWERAGE WORKS, MILFORD-ON-SEA. — On May 28 Mr. P. M. Crosthwaite, M.Inst.C.E., held an inquiry at the Victoria Hall, Milford-on-Sea, in connexion with an application by the Council for a loan of 14,000*l.* for a sewerage and sewage disposal scheme, prepared by Mr. H. C. H. Shenton. Mr. Sidney R. Lowcock, M.Inst.C.E., of London, supported the scheme, which comprised pumping installation, septic tanks, and double contact beds, the effluent being conveyed direct into a stream without further treatment. An interesting point was disclosed at the inquiry, inasmuch as the existing sewerage system was constructed at the expense of Colonel Cornwallis West "for profit" at a cost of about 3,500*l.*, from which he derives an income at present of 70*l.* from payments made to him for the use of such sewers, inasmuch as any person connecting drains with these sewers has to sign a sewer agreement undertaking to pay a yearly contribution to Colonel West as a sewer rate of 6d. in the pound on the rateable value. Mr. G. Lushington, on behalf of Colonel West, contended that in these circumstances the existing sewers came within the provisions of sect. 13 (1) of the Public Health Act, 1875, and therefore was not a public sewer nor vested in the Council. Mr. Robert Green, M.Inst.C.E., of Birmingham, in his evidence on behalf of Colonel West, contended that the council had not included in their estimate submitted to the Local Government Board a sufficient sum to cover the depreciated value with easements of Colonel West's sewers, and that a length which the Council did not propose under any circumstances to purchase below the point of interception with the existing sewers would be a desirable adjunct to the complete scheme, and would act as a safety-valve as a storm-water sewer inasmuch as no storm overflows had been provided in Mr. Shenton's scheme. Mr. Green also contended that the time would soon arrive when the proposed provision of contact beds would be found to be inadequate to meet the needs of the district during the summer season, and to conform with the requirements of the Local Government Board.

SWING-BRIDGE, LITTLEHAMPTON.—A swing-bridge has been constructed across the river at Littlehampton. The river at the site of the new structure is 292 ft. wide at high water, and the bridge consists of a side span of 104 ft. on the west side, and a swing span with two equal arms of 98 ft. each. The roadway is 26 ft. wide on the western approach span, and 17 ft. wide on the swinging span. The machinery for working the bridge is fixed in a building on the top of the swing span, and consists of a 12-h.p. petrol engine. A number of bridge contractors were asked to send in designs and tenders, and after consideration by the Council that of Mr. John J. Webster, M.Inst.C.E., of Westminster, was accepted, and Messrs. Alfred Thorne & Sons, of Westminster, who had tendered upon this design, were instructed to carry out the work. This has been done under the personal superintendence of Mr. A. John P. Thorne. The resident engineer was Mr. W. Fletcher Robinson, M.Inst.C.E. The engineers' contract amounted to 12,988*l.*

NORWICH SEWERAGE EXTENSION.—A public inquiry was held at Norwich Guildhall on the 29th ult. by Mr. E. A. Sandford Fawcett, M.Inst.C.E., an Inspector of the Local Government Board, respecting an application by the Norwich Town Council for sanction to borrow 27,487*l.* for sewerage and water drainage works. The loan, it was stated, would comprise 15,382*l.* to be spent on sewerage and surface-water drainage in the added area of Catton and Sprowston, and 12,105*l.* on surface-water drainage in Unthank-road. Mr. A. E. Collins is the City Engineer.

SEWAGE WORKS, NEILSTON, N.B.—The first installation of Neilston new sewage purification works has just been inaugurated. Messrs. Wyllie & Blake, C.E., Glasgow, are the engineers of the scheme.

## Miscellaneous.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS. —The partnership between Mr. Edward John How and Mr. Henry King (Messrs. James Hill & Co., ironmongers, 100A, Queen Victoria-street, E.C.) has been dissolved. Mr. How retires from the business, which will be carried on by Mr. King.——The Sneyd Collieries, Ltd., Burslem, Staffs (brickworks department), have appointed Mr. R. L. Huxtable, of 12 and 14, Arthur-street West, London Bridge, E.C., as sole agent and representative for London and district. All inquiries regarding glazed and enamelled bricks may be addressed to him as above.

A COLONIAL'S GUIDE TO LONDON.—Under this title the Bureau for Colonials have issued a small book (price 3d.), compiled by Mr. A. Staines-Manders, containing a great deal of useful information for Colonials visiting London, as to railways and other means of transit, the best way of getting to places of interest, etc. It seems a really useful and well-arranged little book.

MIDDLESEX COUNTY COUNCIL WORKS.—At the meeting of the Middlesex County Council on May 26 it was reported that the contract for the construction of the tramway, High-road and Church-road, Willesden, had been completed on a schedule of prices by Messrs. Dick, Kerr, & Co. at a cost of 54,926*l.* 16*s.* 11*d.* The estimated cost of the works was 46,500*l.*, and by far the largest of the items of extras were for additional concrete to secure good foundations for the track work and roadway. The reconstruction of Old Oak-lane canal bridge has been completed, the cost being 4,183*l.* The Education Committee reported the completion of the following works:—Additions and alterations to Bowes-road Council school, Southgate, amount of contract with Messrs. H. Knight & Son, 2,654*l.*, total cost of work, 2,632*l.* 14*s.* 6*d.*; County school, Uxbridge, amount of contract with Messrs. Wisdom Brothers, 6,000*l.*, total cost, 5,997*l.* 18*s.* 5*d.*; Tudor-road Council school, Southall, amount of contract with Messrs. Goddard & Sons, 14,268*l.*, total cost, 14,647*l.* 9*s.* 10*d.* It was explained that the causes of the excess were additional works to foundations and drains, and extra cost of wood-block floors.

MIDLAND COUNTIES TRADES EXHIBITION.—This exhibition is to open at Bingley Hall, Birmingham, from October 12 to October 21. It is organised by the "International Trade Exhibitions, Ltd.," Broad-street House, London, to whom applications for space, etc., should be addressed.

POPLAR BOROUGH COUNCIL.—A return with regard to combined drainage which has been prepared for the Poplar Borough Council shows that the expenditure of the borough on combined drainage work carried out during the past fifteen years was, approximately, 15,000*l.*——It is proposed to lease for forty years from the Millwall Dock Company, at a rental of 50*l.* per annum, a site in East Ferry-road for the erection of a new electricity sub-station.

NEW TELEPHONE EXCHANGE, DEPTFORD.—The Deptford Borough Council have given their sanction to the application of C. P. Roberts & Co. for the building and draining of premises on the east side of Brient-street, to be used as the new Deptford Telephone Exchange.

RECONSTRUCTION OF STANLEY BRIDGE, FULHAM. —The Fulham Borough Council have been informed by the London County Council that it is proposed to make provision for pedestrian traffic during the execution of the work of reconstruction of Stanley Bridge, King's-road. Tenders will be invited at an early date for the reconstruction of the bridge, and every effort will be made to secure the completion of the work as rapidly as possible and at the least possible inconvenience to the occupiers of property affected by the improvement.

GENERAL WOLFE MEMORIAL, GREENWICH.—A fund is opened, to the estimated extent of 5,000*l.*, for the erection of a suitable memorial at Greenwich to General Wolfe, who was buried in the parish church of St. Alphege, by the side of his father, on November 20, 1759. A commemorative window was set up in the church by a former warden; it is proposed to erect a parish hall, and to restore, at a cost of 1,000*l.*, the organ, which was originally built by G. England, and having been enlarged by Walker in 1858, was reconstructed, in 1863, by Robson.

DISCOVERY OF ROMAN REMAINS, CATTERICK.—Excavations recently made for extending the limits of the racecourse at Catterick, in the North Riding, Yorkshire, have brought to light a large amount of human bones, with framents of Upchurch and so-called Samian wares and Roman coins. Catterick derives its name from the city of Cattaractorium, established upon the ancient road which enters the county at Bawtry, and, passing through Doncaster, Tadcaster, York, Aldborough, and Catterick, enters the county of Durham at Pierse Bridge, on the Tees. The city continued to flourish until it was laid waste by the Danes. Numerous Roman remains have been found from time to time at Catterick, amongst them being a beautifully-worked gold armilla and a brass vessel filled with coins; the racecourse is near the bridge which crosses the River Swale.

DUKE OF YORK'S SCHOOL.—Mr. E. J. Horniman, M.P., has written to the Chelsea Borough Council suggesting that, in view of the probable demolition of the Duke of York's Royal Military School, the local authority should bring their influence to bear for the retention of as much open space as possible, and securing the preservation of as many of the trees as is practicable. The communication has been referred to a committee for consideration.

LONDON PAVING EXPENSES BILL.—In regard to the London Paving Expenses Bill, recently introduced in the House of Commons by the President of the Local Government Board, Greenwich Borough Council is circularising the other metropolitan local governing bodies with the object of obtaining an amendment of the measure. By the Bill it is proposed to exempt "new street" paving charges, the owners of any church, chapel, or place appropriated to public religious worship for the time being exempt from rates, and to provide that the proportion of expenses which would, but for the exemption be chargeable upon such premises or the owners, shall be borne by the authority paving the street. Greenwich Council are of opinion that an alteration of the measure is necessary to prevent the exemption of premises only temporarily used for religious worship (a not uncommon incident) by providing that if such site should within twenty years from the paving of the street be used for other than religious purposes, the sum paid by the paving authority shall become repayable by the owners of the site, and shall be recoverable as paving expenses in the usual manner.

SURVEYORS' INSTITUTION.—The annual meeting of the Somerset, Gloucestershire, and North Wilts Provincial Committee of the Surveyors' Institution was held at the Grand Hotel, Bristol, on the 28th ult., Mr. Peter Addie, Chairman (City Valuer), presiding. Mr. Addie was re-elected Chairman, and all the members of the sub-committee were reappointed. With reference to future meetings, it was decided, on the proposition of Mr. Knowles, that they should be itinerant, and Mr. Knowles having extended an invitation to visit Gloucester, this was unanimously accepted. Mr. A. P. I. Cotterell then read a paper on the "Housing and Town Planning Bill." After dealing with the principal provisions of the Bill, Mr. Cotterell went on to say that it conferred sweeping powers upon the Local Government Board to enforce the execution of the Housing Acts upon complaint; it substituted the Local Government Board for the Court of Quarter Sessions as a Court of Appeal; it practically set the magistracy on one side and converted the Local Government Board into a judicial body to decide local questions as to the rights of property. When it was considered that the Local Government Board was a nebulous body which never met, and that its work was carried on by its officials, it would be seen that that provision marked the introduction of a bureaucratic system, more of which was seen as they proceeded with the examination of the Bill. There was little doubt that the President of the Local Government Board, in introducing the measure, had gone largely to Germany for his inspiration, coupled with the policy advocated by the Garden City Association and many social reformers. Although some of the proposals might be considered drastic, they must feel that many of them were necessary, and would be to the benefit not only of the public, but in the end to the landowner himself. It was significant that there were few, if any, landowners in Germany who now objected to town planning. The Bill undoubtedly introduced great and drastic innovations. It certainly affected what they were accustomed to regard as the rights of property in order to promote the public

interest. On the whole he believed that the Bill would do good, and as regards surveyors, if modified by the admission of the great body of expert advice obtainable throughout the land, would be found, not to damage, but to actually promote, the true interests of the profession. The Chairman proposed a vote of thanks to Mr. Cotterell for his paper, which was cordially agreed to. A discussion followed, and, on the proposition of the Chairman, seconded by Mr. Parsons, the following resolution was passed:—"That whilst this Committee is to some extent in sympathy with the objects of the Bill, we believe that its details require considerable amendment, and that in particular some opportunity should be given for access to the large body of expert opinion available throughout the country, rather than referring local questions, of importance both to owners and municipalities, to the Local Government Board."

PROPOSED STREET IMPROVEMENTS, WIMBLEDON.—Major J. Stewart, R.E., recently held a Local Government Board inquiry into the application of the Urban District Council to borrow 2,707*l.* for works of private street improvement. The Surveyor, Mr. Jerram, gave particulars of the streets proposed to be made up.

IRISH MATERIALS FOR IRISH BUILDINGS.—Mr. Devlin asked in Tuesday's Parliamentary papers if any steps are taken by the Local Government Board to secure that only Irish materials are used in the erection of cottages sanctioned under the Labourers Act.—Mr. Birrell replied that the Local Government Board have reason to believe that district councils in Ireland are strongly in favour of using none but Irish materials for labourers' cottages whenever such materials may be procurable. The Board do not suppose that any recommendation from them would stimulate the councils further in the matter, which is one wholly within their discretion.

POST-OFFICE, BELFAST.—Replying to Mr. Sloan, the Postmaster-General states in the Parliamentary papers that a site has been purchased for the extension of the head post-office at Belfast. It is bounded on three sides by Millers-lane, Berry-street, and Smithfield, and on the fourth side by private property. He is unable to say when building operations will be commenced, but will see that matters are pressed forward as soon as possible.

# Law Reports.

## ACTION BY BUILDERS.

IN the King's Bench Division on the 29th ult., the hearing was concluded of the case of Hardy *v.* Fisher—an action by the plaintiffs, a firm of builders, against Mr. J. Fisher, a member of the firm of Messrs. Robinson & Fisher, auctioneers, of King-street, St. James's, for damages for alleged breach of contract to employ them to erect a block of flats at Hampstead at a cost of 21,000*l.*

The defence was a denial of liability.

After hearing the plaintiff's evidence the jury stopped the case and returned a verdict for the defendant, and judgment was entered accordingly with costs.

Mr. H. Morris appeared for the plaintiff, and Mr. Marshall Hall, K.C., and Mr. Kisch for the defendant.

## MASTER PLASTERER'S ACTION AGAINST A TRADE UNION AND ITS OFFICIALS.

IN the King's Bench Division on the 4th inst. the Lord Chief Justice delivered judgment in the case of Smithies *v.* the National Association of Plasterers and others—an action by the plaintiff, Mr. William Smithies, a master plasterer, carrying on business in Birmingham, against the defendants for an injunction and damages for having, it was alleged, induced certain persons to break their contracts with the plaintiff. (The case was reported in the *Builder* of May 23 last.)

It will be remembered that the plaintiff had undertaken in the course of his business large contracts for plastering and scagliola work in connexion with buildings in the course of erection, and for that purpose he had to employ a large number of skilled workmen and labourers. The defendant Duckett was the secretary of the Birmingham branch of the Association, which is a registered trade union, and the other defendants were Stephen Wall, John Ponsford, and John Dear, the trustees of the association, and H. Ecclesby and J. W. Forrester, skilled plasterers and scagliola workers.

The short facts of the case were as follows:—The plaintiff had, in December, 1901, entered into a five-years' agreement with the defendant Forrester to employ him as a skilled plasterer and scagliola worker, and in March, 1904, had entered into a three-years' agreement to employ Ecclesby in a like capacity. On January 17, 1905, plaintiff had in his employ a considerable number of labourers, apprentices, and skilled workmen, and it was alleged that the latter could only terminate their employment with the plaintiff by giving him not less than one hour's notice to expire at the end of the day. On January 17, 1905, plaintiff was engaged in carrying out large contracts for plastering work at Barnsley Hall Asylum, near Bromsgrove; at premises at Hockley Hill, Birmingham; at the Dental Hospital, Birmingham; and also certain work at his own premises in Islington-row, Birmingham. Plaintiff alleged that the defendant Association and one, Deller, the late secretary, and Duckett had, with the object of compelling the plaintiff to discharge a foreman named Gibbs, maliciously induced Ecclesby and Forrester and other workmen to break their contracts of service with him. Plaintiff further said that the Association and Duckett had conspired to coerce and had coerced certain workmen, including Ecclesby and Forrester, not to carry out their contracts with him and not to enter into contracts with him. Plaintiff accordingly claimed damages against Ecclesby and Forrester for alleged breach of agreement.

The defendants generally denied the allegations made against them in the statement of claim, and the Association further pleaded that it was not responsible, that the plaintiff had himself put an end to the contracts between himself and his workmen by employing Gibbs, who, they said, was a defaulter from the Association, and by refusing to refer the continued employment of Gibbs to the conciliation board in breach of alleged agreement between the plaintiff and his workmen, and in the case of Ecclesby and Forrester by refusing to pay them according to the terms of his agreement with them. It was also said that the plaintiff's agreement with Ecclesby and Forrester had been broken by the plaintiff before January 17, 1905.

The Lord Chief Justice, in the course of an elaborate written judgment, after stating the facts, held that the plaintiff had established no cause of action against the defendant Association or its officials. On the other hand, he could not see that the defendants Forrester and Ecclesby had any defence on the merits because they had broken their contracts with the plaintiff. He therefore thought those defendants were liable to the plaintiff for damages in respect of the breach, and he assessed the damages at 25*l.* as against each of those defendants, with costs to be taxed on the County Court scale. As against the other defendants the action would be dismissed with costs.

His lordship granted the plaintiff a stay of execution on the usual terms with the view to an appeal.

(An extended report of the judgment will appear in next week's issue of the *Builder*.)

## CASE UNDER THE HOUSING OF THE WORKING CLASSES ACT.

THE case of Sprang *v.* the Brentford Urban District Council came before a Divisional Court of King's Bench, consisting of the Lord Chief Justice and Justices Darling and Sutton, on the 28th ult., on the appeal of Mr. Sprang from a decision of the Brentford justices under the Housing of the Working Classes Act of 1893.

Mr. Sylvain Mayer appeared on behalf of the appellant, and Mr. Bodkin represented the respondents.

Mr. Mayer said that before the Brentford magistrates Mr. Woodbridge had, on behalf of the Urban Council, asked for a closing order against Mr. Sprang in respect of six houses at Cromwell-place, Back-lane, and the Bench subsequently made temporary closing orders in respect of two houses, making no orders regarding the other four. The first point, said counsel, was that the notices which had been sent out by the Council for the execution of certain alterations were bad, inasmuch as the requisitions were not set forth in the notices. The Council would not say what they wanted, but simply gave notice to abate an alleged nuisance. His client had gone to the Council prepared with a schedule, and the Council would not look at it. The petty sessional proceedings were adjourned until January 14 to enable the appellant to send to the respondents further specifications of the work he was prepared to carry out. Appellant sent these specifications on January 7, and his case was that he had had no time to carry out the work, and further that the justices had no power to make a closing order. The justices had held that the houses were in such a condition as to be unfit for human habitation, despite expert and other evidence to the contrary on behalf of Mr. Sprang. The property in question was not slum property; the proposed alterations were purely of a structural character, and there was nothing of an insanitary nature. Such questions as window-sashes, etc., were involved. His client offered to do all the repairs that were necessary provided the Council told him what they wanted.

The Lord Chief Justice said that the whole point was whether the justices had rightly made the closing order having regard to the notices in the correspondence.

Mr. Mayer: We say that they made the order without giving us the opportunity to carry out the work.

The Lord Chief Justice said that the question of the justices making the order and the giving of time to do the work was important. Regarding the notice sent by the Council, his lordship said the parties had been corresponding together, and when the case came up on January 14 there was practically an agreed schedule.

Mr. Bodkin, on behalf of the respondents, said that a notice was given to render a house fit for human habitation. The statute seemed to contemplate that an owner of property ought to know what would be done to his property to put it in a fit state. If he did not he had to be summoned. The only requisition under the Housing of the Working Classes Act was a request to put the house into a fit state of habitation. The owner of a house was summoned before the magistrate for failing to comply with that requisition in the notice. The matter was left entirely in the discretion of the Court. They had to prohibit the using of the premises if they were of opinion they were unfit for human habitation, until the house was put in a fit condition.

In the result their lordships dismissed the appeal.

## SHORTLANDS DRAINAGE DISPUTE.

IN a Divisional Court of King's Bench, consisting of the Lord Chief Justice and Justices Darling and Sutton, last week, the case of Bloor *v.* the Beckenham Urban District Council was heard on appeal by way of a special case stated by the magistrates upon a point decided by them under the provisions of the Public Health Act, 1875.

Mr. Macmorran, K.C., and Mr. Heber Hart appeared for the appellant, Mr. Bloor; and Mr. C. Glen and Mr. Bethune for the respondent Council.

Mr. Macmorran said that the case was one which arose under sect. 150 of the Public Health Act, 1875, and the question, put very shortly, was whether or not the justices had the power to order frontagers to pay for the expenses of laying down a new surface-water sewer in a road. The contention on behalf of the appellant was that no power lay with the justices to require the work to be done again, it having once been done.

The learned counsel then read the special case, from which it appeared that the appellant was the owner of a house abutting on the Kingswood-road, Shortlands. In 1881 that road was put in order by the then owners of the property, when surface drains were put in connecting with gutters and discharging into a ditch. About the year 1892 the Council commenced to carry out a scheme for the drainage of the district. On March 14, 1904, notice was served upon the appellant with regard to the surface-water pipe and drainage, and the appellant's share of the expenses of such work was 60*l.* The justices decided that it was a question of fact whether the Kingswood-road was a street not paved within the meaning of the section of the Act, and they decided that it was a street which came under the section, and accordingly made an order on the appellant. The question for the opinion of the Court was whether, on July 5, 1904, the Kingswood-road was a street so sewered to the satisfaction of the urban district authority, and whether the justices came to a correct conclusion on the facts of the case.

The learned counsel contended that the justices had come to a wrong conclusion, having regard to the facts of the case.

Mr. Glen having addressed the Court on behalf of the respondent in support of the decision of the justices,

The Lord Chief Justice, in giving judgment, said that the question for the decision of the Court was whether upon the facts the magistrates were justified in holding that, on July 5, 1904, the Kingswood-road was a street not sewered to the satisfaction of the urban authority. The difficulty his lordship had felt was whether or not, upon the facts it was open for anybody to say that the Board did not, in 1881, practically elect by contract to decide that what they did was sufficient to sewer the road. But he could not altogether exclude the fact that this road had never been taken over. In 1881 the local authority did put a sewer down in a private road. In 1892 the question of the road came up again. It could not be

said, having regard to what they contemplated doing in 1882, which they abstained from doing at the request of the frontagers, that there was any action by the local authority which showed that they were satisfied. He was of opinion that the justices had power to deal with the case as a question of fact, and that they did so, and therefore that the appeal should be dismissed with costs.

Justices Darling and Sutton concurred.

## A MANCHESTER BUILDING CONTRACT.

THE Gorton branch of the Independent Labour party were defendants in the Manchester County Court, on the 25th ult., being sued by John Edward Rangeley, joiner and builder, of Hyde-road, for 21*l.* as the balance of an account for work done and materials supplied. Mr. Overend Evans was counsel for the plaintiff, and Mr. Fred Brocklehurst for the defendants.

Mr. Evans said that with a view to putting up a labour institute the defendants bought a structure which had been used as a mission church in Ladybarn. It was a wooden building, with a corrugated iron roof. A site was chosen in Knutsford-road, and the tender of the plaintiff to take the building down, remove the materials, and re-erect the building was accepted at 81*l.* 10s. When it was discovered that much of the wood was rotten the defendants told the plaintiff to go on with the work as far as the good timber would permit, and subsequently they agreed to pay for new timber needed, but refused to pay for the cost of working it. As the cost of shaping it would be greater than the cost of the material the plaintiff could not complete the contract.

The plaintiff denied that the building was pulled down carelessly.

The foreman engaged and another workman gave similar evidence.

Mr. Thomas G. Hartland, architect and surveyor, said it was usual in such contracts for the contractor to say he undertook to supply necessary new timber. In this case there was no such specification.

For the defence the Rev. Ernest Barnes Ward, rector of St. Chad's Church, Ladybarn, stated that only the timber in the lower portion of the structure was rotten, and this was so palpable that anybody could have seen it. The building was not pulled down in a proper way. Portions were left exposed to the weather, and one gable was dragged down bodily by four men pulling at a rope tied over its apex. Then some of the principals were left standing without support for a day or two. He spoke to several of the men about it.

Other witnesses having been heard, Mr. T. Cook, architect, was asked what the custom of the trade was in a case of this kind where the contract was silent. He replied that the contractor would be called upon to supply the new timber necessary, the assumption being that it was provided for in the contract, there being no details whatever to show how the 81*l.* 10s. was made up.

Mr. Evans: Do you mean to tell his Honour that if the whole of the timber in this building had been rotten it would have been this man's duty to supply fresh?—Certainly, if he were foolish enough to make a contract upon such terms.

Mr. Brocklehurst contended that as the contract had been made at a specified price, as it had not been completed, and as the incompleteness was due, not to the defendants' prevention, but to the plaintiff's unwillingness to proceed, the plaintiff could not succeed.

After some lengthy legal arguments,

Judge Parry said the case was one of importance to contractors. It was perfectly clear on the evidence that some of the timber was rendered unfit for use because of the careless manner in which the building had been pulled down. The important point to look at though was the fact that a contractor was expected in law to exercise common prudence and inform himself of all particulars connected with the work. He must discover, when there were no specifications, what he was expected to do. In this case the defendants had a right to expect that before giving his estimate the plaintiff had discovered how far the timbers were useful for rebuilding, especially as it was obvious, however good the building might be, that a certain amount of wastage would result from the pulling down and re-erecting. He therefore found that the cost of the new timber and the working of it was covered by the contract. But even if he were wrong in that view the plaintiff could not succeed in his claim, for it was clearly his duty to have protested, completed his contract, and then sued for extras. A little incidental difficulty arising did not entitle a contractor to throw up his contract, though it would be quite different if something wholly new arose, such as the finding of a quicksand. There would consequently be judgment for the defendants, with costs on the claim.

Mr. Evans asked that no order should be made as to the counterclaim for 25*l.* in respect of completing the re-erection, inasmuch as on the claim the defendants had saved 21*l.* for work done.

Mr. Brocklehurst pointed out that legally the defendants were entitled to be paid the 25*l.* they had had to pay, but they desired to deal fairly.

The counterclaim was accordingly withdrawn.—*Manchester Guardian.*

## POLICE AND PAINTERS' LADDERS.

AT the Southampton Police Court, on the 20th ult., before the Mayor, Alderman Sharp, Walter Walton, of Trinity-road, was summoned that between May 8 and 12 he caused an obstruction in Royal-crescent by means of ladders.

Mr. Gulliford defended.

The Chief Constable, Mr. Jones, said painters had a habit of leaving ladders up over the week-end, and not in use. He requested several of them to remove them. Some did so, but those summoned refused to do so.

P.C. Plyer and P.C. Reeves gave evidence as to the obstruction caused, stating that people could not walk on the pavement close to the kerbing.

Mr. Gulliford said the case was one of very great importance to the building trade, and very material in its effects. It affected one of the most important industries in the town. It had been the custom time out of mind to allow the builders and decorators to place their ladders up and keep them up there whilst the work was in progress. It had been done by common consent.

Mr. Jones: Except week-ends.

Mr. Gulliford said it had been the custom for ladders to remain outside buildings during the progress of the work, and it was only quite recently that any suggestion had been made that the contrary should be done. Surely if that custom had continued so long and it was thought necessary to alter it, notice should be given to the trade, so that they might adapt themselves to the altered conditions.

Mr. Jones: That was done, sir.

Mr. Gulliford said he would tell the Bench what was done. At nine o'clock on the Saturday night, defendant, at his private residence, was called upon by a police constable, who said he was to take down his ladders. That was the very first intimation that the defendant received that he was required to do anything of the kind. As a matter of fact it was eight hours after his men had left their work. He submitted that was not a reasonable way of introducing that charge.

Mr. Jones, in answer to the Mayor, said those circumstances were correct in that case. As he had pointed out at the commencement, prosecutions were only taken out against those people who absolutely refused to take them down. What the defendant said in reply was that he should not remove it until the job was finished. He did not intend to remove them.

Mr. Gulliford said it would take five or six men to take the ladder down, and it would take a considerable time to do it. He was going to suggest that it was not a reasonable thing for the men to do. Mr. Jones no doubt proceeded in the interest of the town. It was for the Bench to say whether or not that thing should happen.

Mr. Jones: Certainly; that is why I have brought it before them.

Mr. Gulliford continued, and said one person had informed him that hitherto builders had made a practice of lowering ladders in the early morning to prevent any risk. If the procedure now suggested was to be insisted upon, between 12 and 1 o'clock, the busiest time on the busiest day as well, he (the person in question) would not take the responsibility of lowering the high ladders unless the police held up the traffic while he did it. The element of danger would be considerable, and all that was obviated at the present time by the work being carried out early in the morning. Mr. Gulliford remarked that, of course, the police would prosecute larger firms, men who held public positions in that town, who committed the same act.

Mr. Jones: Certainly.

Mr. Gulliford suggested that in that case there should be no conviction. The defendant had removed the ladders on the following Saturday, before the summons was served.

The magistrates retired, and upon returning into Court, the Mayor said the magistrates were unanimously of the opinion there should be no conviction. The question of the ladders being kept up while the work was finished was another thing. The Mayor referred to the inconvenience of frequently moving the ladders.

Mr. Jones gave notice of appeal.—*Hampshire Independent.*

## Patents of the Week.

APPLICATIONS PUBLISHED.*

10,343 of 1907.—COALBROOKDALE COMPANY, LTD., and A. E. EVANS: *Roofing Tiles.*

This relates to a roofing tile, and consists in providing a tile of the plain type with a projecting rib extending across its upper surface at or near the head. This rib is preferably of such a height that when the tiles are laid in position on the roof structure adjacent rows, in addition to being in contact along the front edge of the upper row as usual, are also in contact along the ribs at or near the heads of the tiles of the lower row. By this arrangement the penetration of rain and snow between the two tiles to the interior of the roof is prevented. In order that tiles of this kind may be readily packed together for storage or transport, a transverse groove is formed on the under side of the tile exactly underneath the rib, and corresponding in size thereto, so that in packing, the rib of one tile fits into the groove of the next. For the same purpose the nibs which are used to engage the laths are disposed in two ways, so that when packed together, the two forms being arranged alternately, the lower ends of nibs on one tile fit in with the upper parts of the nibs on the tile below. It is found that the provision of the rib across the head of the tile reduces the amount of lap that it is necessary to give the tiles whey laying them to form a roof.

28,473 of 1907.—A. G. PATRICK: *Two-bolt Mortise Locks and Mortise Latches.*

This relates to a two-bolt mortise lock or a mortise latch, and consists in the use of an extension guidepiece which carries a tee-headed rod or plunger—operated in compression—whose purpose is to allow of "follow" operating the lock although at some distance from it, and thus enabling the handles or knobs to be securely fixed.

16,020 of 1907.—THOMAS HOLCROFT & SONS, LTD., and A. HOLCROFT: *Operating Mechanism of Flushing Apparatus for Water-closets.*

This relates to flushing apparatus for a water-closet, wherein the fulcrum of the flushing lever is supported by a removable and reversible bridge, in relation to which it is capable of turning, and which has its ends adapted to engage alternatively with one or other of pairs of parts of the cistern which are at opposite sides of the transverse central plane of the cistern in a manner, which, while holding the bridge, enables it to be reversed from one side of the said plane to the other in the conversion of the apparatus from right to left, or *vice versâ*, by merely lifting it without otherwise unfastening it from one pair of such parts and engaging it with the other pair. The ends of the bridge fit within one or other of a pair of openings to suit the hand for which at the time the cistern is required, the bridge being reversible by merely lifting it out from the one pair of openings, reversing it, and lowering it down into the openings of the other pair. The openings for the reception of the ends of the bridge preferably consist each of the space between two guides, which project from the wall of the cistern. Shoulders may be formed on the ends of the bridge to rest upon the tops of the guides, and lugs may be formed upon the cistern cover which bear upon the ends of the bridge. The cover of the cistern is reversible, and has two openings only through the top thereof, namely, the central opening and the opening for the passage of the bridge bracket. The flushing lever and the bracket which supports it are engaged with one another by means of a gap and pin connexion which admits of the lever being readily disengaged from its support and re-engaged therewith, without removing the pin from the part which carries it; and means are provided whereby, when the lever has been pulled down sufficiently to fully lift the bell, the lever is so engaged with the support that it cannot be moved by the downward pull, or by a jerk, due to its reaching its downward position in a manner which will disengage it from its support or allow it to unduly raise the bell; such means being characterised by the flushing lever and the part which supports it being provided as to the one part with a stop device, and as to the other part with a device with which the stop device comes into engagement when the lever has been pulled down sufficiently to fully raise the bell, with the result that the lever when pulled down is securely interlocked by the engagement of such devices in combination with the relative positions of the parts of the gap and pin device.

* All these applications are in the stage in which opposition to the grant of patents upon them can be made.

PATENTS.—*Continued on page 680.*

# List of Competitions, Contracts, etc.

**For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xviii.; Auction Sales, xxviii.**

**Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.**

**The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.**

***** It must be understood that the following paragraphs are printed as news, and not as advertisements: and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

## Competitions.

* JULY 31.—**Banbury.**—SCHOOL.—The Banbury Educational Committee invite designs for new Public Elementary School. See advertisement in this issue for further particulars.

AUGUST 1.—**Guernsey.**—COUNTRY HOSPITAL.—Plans are being asked for the proposed building of an infirmary. For conditions and other information apply to the President of the Directors of the said Hospital, Mr. Thomas Robin.

* NO DATE. — **Aberystwyth.** — LIBRARY. — The Council of the National Library of Wales invite architects to submit designs for erection of the library buildings at Aberystwyth. See advertisement in this issue for further particulars.

## Contracts.

### BUILDING.

JUNE 5-22.—**Warford.**—SCHOOL.—Manchester Education Committee invite tenders for the erection of the Warford Special School for Epileptic Children, Cheshire. Plans may be seen at the Education Offices, Deansgate, Manchester. All firms desiring to tender are required to make a deposit of 2*l.* 2*s.* on or before June 5.

JUNE 9.—**Liskeard.**—ADDITIONS TO HOUSE.—Alterations and additions to a house on the Parade, Liskeard, for Mr. S. Bone, J.P. The plans, etc., can be seen at office of Mr. John Sansom, F.R.I.B.A., architect, Liskeard.

JUNE 9.—**Mullingar.**—VERANDAH.—The Committee of Management of the District Asylum invite tenders for the supply and erection of a verandah and balcony, costing about 600*l.*, and for alterations to sanitary block, Pettiswood, costing about 100*l.* Drawings, etc., to be obtained from Mr. A. Basil Wilson, Maryville, Malone, Belfast, on payment of 10*s.*, which will not be returned.

JUNE 9.—**Nether Tabley.**—ALTERATIONS, ETC., TO SCHOOL.—Cheshire C.C. Education Department (Administrative Sub-Committee for the Knutsford and Wilmslow Union Area) invite tenders for alterations and improvements at Nether Tabley Council School near Knutsford. Plans, etc., can be seen at the office of Mr. H. Beswick, County Architect, Newgate-street, Chester, and quantities obtained, on deposit of 1*l.*

JUNE 9.—**West Camel.**—CHAPEL.—Proposed chapel at West Camel. Plans, etc., may be seen at the residence of Mr. Clothier, Camel Hill, Queen Camel.

JUNE 10. — **Belfast.** — OFFICES. — Erection of new offices, workshops, and stores for Messrs. W. Coates & Son, Fountain-street. Plans, etc., may be seen at office of Messrs. Young & Mackenzie, Scottish Provident Buildings, Belfast, and schedule of quantities obtained from Messrs. W. H. Stephens & Sons on payment of a deposit of 2*l.* 2*s.*

JUNE 10.—**Belfast.**—SHED.—The Belfast Harbour Commissioners invite tenders for the construction of a lean-to shed, on the west side of the goods shed on Donegall Quay, Belfast. Drawings may be seen at the office of the Harbour Engineer, Mr. W. Redfern Kelly, M.Inst.C.E. from whom copies of the specification, etc., may be obtained.

JUNE 10. — **Birmingham.** — UNDERGROUND CONVENIENCE.—The Public Works Committee invite tenders for the construction of an underground convenience at the junction of Station-street and Hill-street. The drawings, etc. may be inspected, and quantities, etc., obtained, on deposit of 5*l.*, at the office of Mr. Henry E. Stilgoe, M.Inst.C.E., City Engineer and Surveyor, The Council House, Birmingham.

JUNE 10.—**Cardiff.**—WAREHOUSE.—The erection of a warehouse at Wood-street, Cardiff, for Mr. C. C. Joseph. Plans, etc., may be seen, and quantities obtained, at the office of the architect, Mr. E. W. M. Corbett, Castle-street, Cardiff.

JUNE 10.—**Droitwich.**—SHOP, ETC.—The Droitwich Salt Company, Ltd., invite tenders for building a shop and offices in Ombersley-street. Drawings, etc. may be seen at the Company's offices, Ombersley-street, Droitwich.

JUNE 10. — **Hastings.** — REPAIRS. — Hastings Guardians invite tenders for the carrying out of certain repairs at their three cottage homes, 100, Ashburnham-road, 59, Vicarage-road, and 121, Mount Pleasant-road, Hastings. A copy of the specification of the work may be obtained on application at the Union Offices, 11, Wellington-square, Hastings.

JUNE 10.—**Lesmahagow.**—ADDITIONS TO HOUSES.—Estimates wanted for the mason, joiner, plumber, slater, plaster, and cement works of alterations on and additions to houses at Sandknowe, Lesmahagow. Plans, etc., will be seen at Pathhead (Mr. E. Haire's), Lesmahagow.

JUNE 10. — **Pencoed, Abertridwr, etc.** — SCHOOLS.—Glamorgan C.C. invite tenders for:—(1) Erection of a new infants' school at Pencoed; (2) erection of a new elementary school at Abertridwr; (3) erection of front walls and gates at the County School at Aberdare; (4) improvements at Rhydygwern Council School, near Machen; (5) alterations and additions to the Neath-road Council School at Briton Ferry; (6) alterations and additions to the Neath County School; (7) renovation of offices at Vernon-place Schools, Briton Ferry. Plans, etc., of Works Nos. 1 and 2 may be seen, and copies of the bills of quantities obtained, at the Bridgend and Caerphilly Police-stations respectively. Plans may be seen, and specification of Works Nos. 3 and 4 obtained, at the Aberdare and Caerphilly Police-stations respectively, and of Works Nos. 5, 6, and 7 at the Neath County Police-station. The plans and documents for all the works may be seen or obtained at offices of Mr. W. E. R. Allen, Deputy-Clerk of the C.C., Glamorgan County Offices, Westgate-street, Cardiff.

JUNE 10.—**Rowlands Gill.**—HOUSES.—Erection and completion of two houses at Highfield, near Rowlands Gill. Plans, etc., to be seen at Mr. R. Hodgson's, Park House, Rowlands Gill.

JUNE 10. — **Ryton Barmoor.**—HOUSES.—Erection of nine houses at Ryton Barmoor for the Blaydon and District Industrial and Provident Society, Ltd. Plans, etc., may be seen at 7, Barmoor-terrace, Ryton.

JUNE 10. — **Sheepridge.**—HOUSES.—Three scullery houses and alterations to present property, Wigganlane, Sheepridge. Name and address to Mr. James H. Hall, architect and surveyor, 10, Market-buildings, Market-street, Huddersfield.

JUNE 10.—**Tranent.**—ALTERATIONS TO SCHOOL.—The School Board of Tranent invite tenders for the various works in connexion with proposed alterations, on Tranent School. Schedules of quantities may be had on application to Messrs. Lyle & Constable, architects, 3, Hill-street, Edinburgh.

JUNE 10.—**Venterdon.**—RENOVATIONS AND REPAIRS TO WESLEYAN CHAPEL, VENTERDON. — Mr. Lawrence Scantlebury, architect, etc., George-place, Callington.

JUNE 11. — **Abertridwr.** — Tenders required for twenty or more houses for the Old Mill Cottage Club.—Particulars to be obtained at office of Mr. John H. Phillips, F.R.I.B.A., architect, Clive-chambers, Windsor-place, Cardiff.

JUNE 11.—**Ballytrasna.**—HOUSE.—Building of a dwelling-house for Mr. John B. Ivis at Ballytrasna, near Fermoy. Plans, etc., can be seen at the office of Mr. Richard Ryce, solicitor, Fermoy.

JUNE 11.—**Batley.**—ALTERATIONS.—Batley Co-operative Society invite tenders for the alteration of the old post-office into two shops. Specifications may be seen at the society's office. Mr. W. H. Childe, Secretary.

JUNE 11-23. — **Chichester.** — SCHOOL.—West Sussex and Chichester Joint Education Authority invite tenders for new Secondary School for girls, Chichester. Plans, etc., may be seen, and bills of quantities obtained, on application to Mr. Hadyn P. Roberts, A.R.I.B.A., County Education Architect, Education Offices, Horsham, on payment of a deposit of 3*l.* 3*s.*

JUNE 11.—**Huddersfield.**—ALTERATIONS TO TRAMWAY DEPOT.—The Corporation of Huddersfield invite tenders for alterations and additions proposed to be made at the Tramways Depôt, Great Northern-street. Plans, etc., may be seen, and bills of quantities, etc., obtained, on application at the offices of Mr. K. F. Campbell, M.Inst.C.E., Borough Engineer and Surveyor.

JUNE 11.—**Jarrow.**—BAKERY PREMISES.—Tenders for proposed new bakery for Jarrow and Hebburn Co-operative Society, Ltd. Plans can be seen, and a copy of the quantities obtained, on a deposit of 2*l.* 2*s.* Apply at the Clerk of Works' office, 36, Queen's-road, Jarrow.

JUNE 11.—**Nelson.**—CHURCH TOWER, ETC.—Building a tower and transepts and for lengthening the nave of St. John's Church Nelson. The plans, etc., can be seen, and quantities obtained, at office of Mr. E. M. Bruce Vaughan, F.R.I.B.A., Architect, Cardiff, on payment of a fee of 2*l.* 2*s.*

JUNE 11. — **Stainland.** — MILL EXTENSION. — The mason's, carpenter's and joiner's, plumber's and glazier's, iron and steel, and slater's work required in the extensions to new mill Stainland, for Messrs. J. Shaw & Co., Ltd. Plans may be seen, and bills of quantities obtained, at offices of Messrs. Joseph F. Walsh & Graham Nicholas, F.R.I.B.A., architects, Museum-chambers, Harrison-road, Halifax.

* JUNE 12. — **Cleethorpes.**—TELEGRAPH STATION.—The Director of Works Department Admiralty invites tenders for a new wireless telegraphy station at Cleethorpes. See advertisement in this issue for further particulars.

JUNE 12.—**Cwmgwrach.**—HOUSE.—The erection of a dwelling-house at Cwmgwrach, Glyn-Neath for Mr. W. Llewellyn. Drawings, etc., may be seen at office of Mr. J. Llewellin Smith, M.S.A., architect, Aberdare.

JUNE 12. — **Farnborough.** — COOKERY ROOM AT SCHOOL.—Kent Education Committee invite tenders for the erection of a cookery room at Farnborough Council School, near Bromley, Kent. Plan, etc., by Mr. W. H. Robinson, M.S.A., may be inspected upon application to Mr. Henry Barnes, Willow Bank, Farnborough, R.S.O., Kent (School Correspondent), or at the office of the Committee.

JUNE 12.—**Harlech.**—SCHOOLROOM.—The erection of a new schoolroom and house at Las Ynys, Harlech. The plans, etc., can be seen with Mr. Edward Griffith, Post-office, Harlech.

JUNE 12.—**West Bromwich.**—SCHOOL WORKS.—The Education Committee invite tenders for:—(1) Ventilation of Greets Green and Gold's Hill Council Schools; (2) erection of additional sanitary accommodation at Beeches-road, Black Lake, and Lyng Council Schools; (3) painting work at various Council schools. Plans, etc., may be seen, and bills of quantities, etc., obtained, on application at the office of Mr. Albert D. Greatorex, M.Inst.C.E., Borough Engineer and Surveyor, Town Hall, West Bromwich.

JUNE 13.—**Ballywalter.**—ALTERATIONS.—Making certain alterations and additions to Ballywalter House, the residence of Lord Dunleath, at Ballywalter, County Down. Plans, etc., can be seen at office of Mr. William J. Fennell, F.R.I.B.A., 2, Wellington-place, Belfast. Bills of quantities have been prepared by Messrs. M'Carthy & Brooks, surveyors, Scottish Provident Buildings.

JUNE 13.—**Corrin, Fermoy.**—HOUSE.—For building a dwelling-house for Mrs. N. Maye, Corrin, Fermoy. Plans, etc., prepared by Mr. W. F. Maye, C.E., architect and surveyor, 51, Grand-parade, Cork, can be seen at the office of Mr. Richard Rice, solicitor, Fermoy.

JUNE 13.—**Crowborough.**—SCHOOL IMPROVEMENTS.—East Sussex Education Committee invite tenders for improvements at the Crowborough (White Hill) Public Elementary Council Schools. Names and addresses to Mr. F. J. Wood, County Surveyor, County Hall, Lewes, from whom all particulars can be obtained.

JUNE 13.—**Foleshill, etc.**—HOUSES.—The erection of children's homes at Foleshill and Stoke for the Coventry Board of Guardians. Plans, etc., may be obtained upon application at office of Mr. T. F. Tickner, F.R.I.B.A., architect, High-street-chambers, Coventry.

JUNE 13.—**Halwin.**—SCHOOL WORKS.—The Cornwall Education Committee invite tenders for the proposed improvements at Halwin Council School. Drawings, etc., may be seen by appointment at the school or at the office of Mr. Sampson Hill, Architect to the Committee, Green-lane, Redruth.

JUNE 13.—**Kea.**—ADDITIONS TO HOUSE.—The erection of additions to the dwelling-house, etc., at Higher Lanner, in the Parish of Kea, in the occupation of Mr. William John Jennings. Plans, etc., now at the farmhouse at Higher Lanner. Mr. George Gow, Tregothnan Office, Truro.

JUNE 13.—**Kendal.**—ADDITIONS.—Additions to Castle Villa, Kendal, park and castle lands, for Mr. H. B. Armistead. Plans, etc., can be inspected, and bills of quantities obtained, on application at office of Mr. Stephen Shaw, F.R.I.B.A., architect, Kendal.

JUNE 13.—**Lewes.**—SCHOOL ENLARGEMENT, ETC.—East Sussex Education Committee invite tenders for the enlargement and improvement of the mixed department at the Burgess Hill London-road, Public Elementary Council Schools. Names and addresses to Mr. F. J. Wood, County Surveyor, County Hall, Lewes, from whom all particulars can be obtained.

JUNE 13.—**Lossiemouth.**—LABORATORY, ETC.—Mason, carpenter, plumber, slater, plaster painter works, and fittings in erecting a laboratory and class-room at Lossiemouth Schools. Plans, etc., to be seen with Mr. R. B. Pratt, A.R.I.B.A., 112, High-street, Elgin.

JUNE 13. — **Milkwall.** — HOUSES. — The Coleford Building Club No. 1 invite tenders for the erection of twelve or more houses on Tofthorn-road, Milkwall, near Coleford, for the Coleford Building Club No. 1. Plans, etc., may be seen, and further particulars obtained, at office of Messrs. James & Morgan, FF.R.I.B.A., architects and surveyors, Charles-street-chambers, Cardiff.

JUNE 15.—**Bishop Stortford.**—ALTERATIONS, ETC., TO WORKHOUSE INFIRMARY.—The Guardians invite tenders for alterations and additions to their Workhouse Infirmary. Specification etc., may be obtained at office of Mr. Alfred G. Gwynn, Clerk to the Guardians, 29, North-street, Bishop Stortford, upon the deposit of 1*l.*

JUNE 15.—**Brighton.**—ADDITIONS TO SCHOOL.—The Brighton Education Committee invite tenders for certain alterations and additions to Pelham-street Council Schools, Brighton. Plans, etc., may be seen, and a copy of the bills of quantities obtained, at the offices of the Surveyors to the Committee, Messrs. T. Simpson & Son, 17, Ship-street, Brighton. A payment of 2*l.* will be required for each copy of the quantities.

JUNE 15.—**Tipperary.**—CHIMNEY SHAFTS.—Tipperary Co-operative Creamery Society, Ltd., invite tenders for the erection of a chimney stack in connexion with their proposed new creamery at Tipperary Town. Plans, etc., will be on view at the offices, "The Saleerooms, Tipperary."

JUNE 16.—**Belfast.**—ALTERATIONS.—Belfast Board of Guardians invite proposals for carrying out several alterations at the Springfield-road Dispensary Station of the Belfast Union. Specification can be seen at office of Mr. Joseph W. Robb Clerk of the Union, Clerk's office, Union Workhouse.

JUNE 16.—**Belfast.**—WORKS.—Belfast Board of Guardians invite proposals for carrying out the following works:—(1) Sanitary annexe, male side of the Infirmary; (2) lavatory, etc., accommodation, 15, 16, and 17 wards of the Infirmary (female side); (3) additional lavatories, etc. at the lunatic buildings; (4) alterations at Nurses' Home (old building); and (5) increasing height of the boundary wall. Plans, etc., prepared by Messrs. Young & Mackenzie, architects and engineers, Belfast. Copy of schedule of quantities, etc., can be had from Messrs. M'Carthy & Brookes, Building Surveyors, Scottish Provident Buildings.

JUNE 16.—**Dubmire, etc.**—SCHOOLS.—The C.C. of Durham invite tenders for new Council schools at Dubmire, Chilton Buildings, Washington, and Cookery Centre, etc., at Seaham Harbour. Plans, etc., may be seen, and bills of quantities obtained, as follows:—(1) For school at Dubmire, near Fence Houses (for about 360 scholars)—At the office of Messrs. J. Potts & Son, architects, 57, John-street, Sunderland. (2) For school at Chilton Buildings, near Ferryhill (for about 700 scholars)—At the office of Mr. C. A. Clayton Greene, architect, 18, Norfolk-street, Sunderland. (3) For school at Spout-lane, Washington (for about 360 scholars)—At the office of Mr. F. Rennoldson, architect, 37, King-street, South Shields. (4) For Cookery Centre, etc., at Seaham Harbour—At the office of the County Education Architect, Shire Hall, Durham.

JUNE 16.—**Handsworth.**—SCHOOL.—The Governors of King Edward VI. Schools, Birmingham, invite tenders for new school buildings to be erected in Rose Hill-road, Handsworth. Names and addresses to the architects, Messrs. J. A. Chatwin & Son, 128, Colmore-row, Birmingham, inclosing a deposit of 5*l*.

JUNE 16.—**Shildon.**—INSTITUTE.—North-Eastern Railway Directors invite tenders for the erection of an institute for workmen, at Shildon. Plans, etc., may now be seen upon application to the Works Manager's Office, Shildon Wagon Works; duplicate plans may also be seen, and quantities obtained, upon application to Mr. William Bell, the Company's Architect at York. Quantities supplied on personal application to parties tendering for the whole of the works.

* JUNE 18.—**Middlesbrough.**—ADDITIONS, ETC.—Tenders are invited for alterations and additions to seventeen houses at St. George's-terrace, Linthorpe-road, Middlesbrough. See advertisement in this issue for further particulars.

JUNE 18.—**Penrikyber.**—HOUSES.—Erection of three officials' houses for the Penrikyber Colliery Company, Ltd. Plans, etc., can be seen, and quantities obtained, at the office of Mr. Geo. Kensbole, Station-road, Bargoed, on payment of 2*l*. 2*s*.

JUNE 19.—**Shirehampton.**—SUBSTATION.—Bristol Electrical Committee invite tenders for the construction of E.H.T. Substation at Pembroke-road, Shirehampton. Copies of the specification, etc., can be obtained from Mr. H. Faraday Proctor, City Electrical Engineer, City Electrical Engineer's office, Temple Back, Bristol, on payment of a deposit of 2*l*. 2*s*.

* JUNE 20.—**Emsworth.**—SCHOOL.—The Southampton C.C. invite tender for new Council School at Emsworth. See advertisement in this issue for further particulars.

JUNE 22.—**Barrow-in-Furness.**—DISINFECTOR BUILDINGS.—The Corporation invite tenders for the erection of buildings required in connexion with the proposed steam disinfector. Plans may be seen, and bills of quantities obtained, upon application at the office of the Borough Engineer.

* JUNE 22.—**Beckenham.**—ALTERATIONS.—The Beckenham U.D.C. invite tenders for alterations to Technical Institute, Beckenham-road, Beckenham. See advertisement in this issue for further particulars.

JUNE 22.—**Manchester.**—ADDITIONS TO EDUCATION OFFICES.—Manchester Education Committee invite tenders for the erection of the additions at the Manchester Education Offices, Deansgate, Manchester. Plans may be seen, and a copy of the bills of quantities, etc., obtained, at the Education Offices, Deansgate, Manchester, on a deposit of 2*l*. 2*s*.

JUNE 22.—**Thomastown.**—HOUSES.—The erection and completion of thirty or more dwelling-houses at Thomastown, near Tonyrefail, for Messrs. The Welsh Navigation Building Club. Plans, etc., may be seen, and all particulars obtained, at the architect's office, 16, High-street, Tonyrefail.

* JUNE 23.—**Chichester.**—SCHOOL.—The West Sussex and Chichester Joint Education Authority invite tenders for a new secondary school for girls at Chichester. See advertisement in this issue for further particulars.

* JUNE 23.—**Harold Wood.**—ALTERATIONS.—The West Ham B.C. invite tenders for alterations, etc., to premises known as The Grange, Harold Wood. See advertisement in this issue for further particulars.

* JUNE 23.—**Haslingden.**—NEW INFIRMARY, ETC.—The Guardians of the Haslingden Union invite tenders for (1) proposed new infirmary; (2) proposed new boiler-house. See advertisement in this issue for further particulars.

* JUNE 25.—**Gravesend.**—SCHOOLS.—The Gravesend T.C. invite tenders for Public Elementary Schools. See advertisement in this issue for further particulars.

JUNE 27.—**Ramsgate.**—NEW ELEMENTARY SCHOOLS.—The Corporation invite tenders for the erection of new elementary schools at Ramsgate, on the Lillian-road Site. Plans, etc., may be inspected at the office of the Borough Engineer. Persons desiring to tender must send in their names, accompanied by a deposit of 2*l*. 2*s*., to Mr. T. G. Taylor, Borough Engineer, Borough Engineer's Office, Albion House, Ramsgate.

NO DATE.—**Belfast.**—ALTERATIONS.—Extension and alterations to the National Club, Berry-street, Belfast. Plans, etc., can be obtained at the office of Mr. W. J. Moore, 36, Royal-avenue, Belfast.

NO DATE.—**Broomhill.**—ADDITIONS TO CLUB.—Additions to Red Row Club Broomhill, Northumberland. Mr. George Reavell, jun., A.R.I.B.A., architect and surveyor, Alnwick.

NO DATE.—**Caerphilly.**—For sixteen houses for Energlyn Building Club.—Particulars obtained at office of Mr. John H. Phillips, F.R.I.B.A., architect, Cardiff.

NO DATE.—**Headingley.**—VILLAS.—Erection of pair of villas, Headingley. Apply for quantities to Mr. Charles H. Brooke, architect, 7, Cookridge-street, Leeds.

NO DATE.—**Leeds.**—COTTAGES.—Erection of two cottage houses. Apply Mr. John Ward, West Fields, Rothwell, Leeds.

NO DATE.—**Portsea.**—HOSPITAL, ADDITIONS.—The Governing Body of the Royal Portsmouth, Portsea, and Gosport Hospital invite tenders for the erection of a new out-patients' department. The plans, etc., may be seen upon application at the offices of the architect, Mr. C. W. Bevis, F.R.I.B.A., Elm-grove-chambers, Southsea. A copy of the bills of quantities will be supplied by the architect upon payment of a deposit of 2*l*. 2*s*.

NO DATE.—**Ryton.**—CHURCH.—New Wesleyan Church Clara Vale, near Ryton. Names to Messrs. T. E. Davidson & Sons, architects, Pearl-buildings, Newcastle-on-Tyne.

## ENGINEERING, IRON, AND STEEL.

JUNE 10.—**Chailey.**—IRON STAIRCASE.—Lewes Guardians invite tenders for an outside iron staircase, to be erected at the Infirmary of the Chailey Workhouse. Plans, etc., can be inspected at the offices of the architect, Mr. E. H. Fuller, 19, High-street, Lewes.

JUNE 10.—**Chorley.**—GAS EXHAUSTER.—Chorley Corporation invite offers for the supply, delivery, and erection of a four-bladed gas exhauster, to be attached to an existing steam engine at their Gasworks. Any further information may be obtained from Mr. J. W. Allin, Gas Engineer, Chorley.

JUNE 15.—**Chilham.**—BRIDGE RECONSTRUCTION.—East Ashford R.D.C. invite tenders for reconstruction of "Pickleden" reinforced concrete bridge, Style Farm-road, in the Parish of Chilham, Kent. Plans, etc., may be seen at the office of Mr. T. W. Pullen, Surveyor, Kennington, near Ashford, by appointment.

JUNE 16.—**Chichester.**—HOT-WATER HEATING.—Tenders are invited by the Committee of West Sussex, East Hants, and Chichester General Infirmary, for providing and connecting up hot-water heating and supply boilers, according to the specification prepared by Mr. G. C. Vernon-Inkpen, F.S.I., architect, Chichester, and 40, Commercial-road, Portsmouth, which can be seen in the Board-room at the Chichester Infirmary.

JUNE 23.—**Tooting.**—CYLINDERS.—The Metropolitan Asylums Board invite tenders for new hot-water storage cylinders, etc., at Tooting Bec Asylum, Tooting, S.W. The drawings, etc., may be inspected at the office of the Board, Embankment, E.C., and can be obtained upon payment of a deposit of 2*l*.

## MISCELLANEOUS.

JUNE 8.—**Teddington.**—FENCING.—Teddington U.D.C. invite tenders for 220 yds. of unclimbable corrugated steel palings. Mr. G. H. Salmons, Clerk, Elmfield House, Teddington.

JUNE 9.—**Newport (Salop).**—FURNITURE, ETC.—For supply of furniture, etc., to the new infirmary. Specifications etc., may be had on application to Mr. R. P. Liddle, Clerk, Union Offices, Newport, Salop.

JUNE 10.—**Bradford.**—ELECTRIC LIGHTING.—The Bradford Corporation invite tenders for electric lighting installation at the Town Hall extension. General conditions of contract, etc., may be seen, and schedule and form of tender obtained, on application to the City Architect, Whitaker-buildings, Brewery-street, Bradford.

JUNE 11.—**Nantwich.**—TEAM LABOUR.—Nantwich R.D.C. invite tenders for the carting of road material, and other team work. Forms of tender may be obtained on application to Mr. C. E. Speakman, Clerk to the Council, 152, Hospital-street, Nantwich.

JUNE 12.—**Romsey.**—STEAM ROLLING.—Romsey R.D.C. invite tender for steam rolling. Forms of tender may be had on application to Mr. Cecil W. Chiddy, District Surveyor, The Hundred, Romsey.

JUNE 13.—**Littlemore.**—TIMBER.—Littlemore Lunatic Asylum Committee of Visitors invite persons to tender for the supply of first yellow archangel deals, first yellow prepared tongued and grooved floor boards and red scantling. Full particulars can be obtained on application to the Engineer at the Asylum. Mr. Thomas M. Davenport, Clerk to the Committee of Visitors, County Hall, Oxford.

JUNE 15.—**Portadown.**—SIGNALLING.—Great Northern Railway Company (Ireland) invite tenders for the alteration of the signalling at Portadown. Parties wishing to tender may see the drawing and specification at the office of Mr. W. H. Mills, Engineer-in-Chief, Amiens-street, Dublin, or copies of them at the District Engineer's Office, Belfast.

JUNE 17.—**Herne Bay.**—TIMBER BREASTWORK.—Herne Bay U.D.C. invite tenders for the construction of 350 ft. of timber breastwork on the East Cliff, Herne Bay. Plans, sections, and specifications can be seen, and form of tender obtained, from Mr. F. W. J. Palmer, C.E., Surveyor to the Council, Town Hall, Herne Bay.

JUNE 17.—**Westminster.**—MOTOR WAGONS.—The Westminster City Council invite tenders (*a*) for the supply and maintenance of one or more, but not exceeding four, motor tip wagons, fitted with interchangeable dust and water bodies; and (*b*) for the maintenance of wagons for working both day and night for five years. Particulars, etc., may be obtained on application at the Town Clerk's office, Westminster City Hall, Charing Cross-road, W.C.

* JUNE 24.—**London, S.W.**—TEAK SCREENS, ETC.—The Guardians of the St. George's Union invite tenders for providing and fitting two teak screens, etc., at their offices, Princes-row, Buckingham Palace-road, S.W. See advertisement in this issue for further particulars.

NO DATE.—**Baildon.**—LAMPS.—Baildon U.D.C. invite quotations for the supply of about 130 lamps. For specification and particulars apply Mr. J. Bentley, Clerk to the Council.

## PAINTING, etc.

JUNE 8.—**Bedlinog.**—PAINTING, ETC.—Cleaning and painting of Moriah Chapel. Specification etc., may be seen with the Rev. Olwern Evans.

JUNE 9.—**Ipswich.**—PAINTING, ETC.—The external painting of East Suffolk Hospital, Ipswich; also the internal painting, papering, distempering, etc., of the nurses' quarters. Specifications, etc., can be had from the Secretary, Mr. E. Bland at the Hospital.

JUNE 9.—**Aldershot.**—PAINTING.—Aldershot U.D.C. invite tenders for painting and repairs to be executed to the exterior of the Isolation Hospital premises at North Town. Specifications may be seen, and full particulars obtained, on application at the Surveyor's office, Grosvenor-road.

JUNE 9.—**Swansea.**—PAINTING.—Swansea Corporation invite tenders for painting the outside of the Borough Fever Hospital buildings. Specifications can be obtained at the office of the Chief Sanitary Inspector, 10, Somerset-place.

JUNE 10.—**Hull.**—FOR PAINTING, ETC.—The Guardians of the Poor of the Sculcoates Union invite tenders for painting, etc., of the interior of the Workhouse Infirmary, Beverley-road, Hull. Forms of tender, etc., may be obtained on application to the Guardians' Architect, Mr. T. Beecroft Atkinson, M.S.A., 11, Trinity House-lane, Hull.

JUNE 10.—**Leeds.**—PAINTING.—Leeds Corporation invite tenders for painting at the City Hospitals at Seacroft and Killingbeck. Specification, etc., may be seen at the Steward's office, Seacroft Hospital.

* JUNE 11.—**Leytonstone.**—PAINTING.—The Guardians of the West Ham Union invite tenders for painting the exterior of their Infirmary at Leytonstone, N.E. See advertisement in this issue for further particulars.

JUNE 12, 15.—**Leeds.**—PAINTING.—The painting work required at various parks and cemeteries. Specifications may be seen, and forms of tender, etc., obtained, at the City Engineer's office, on payment of a deposit of 1*l*. 1*s*.

JUNE 13.—**Bradford.**—PAINTING.—Bradford Guardians invite tenders for the painting and cleaning of the Homes for Aged Poor at Daisy Hill, Bradford. Names, along with a deposit of 1*l*. 1*s*., for specification, to Mr. Fred. Holland, Engineer and Architect to the Board, 22, Manor-row, Bradford.

JUNE 13.—**Littlemore Lunatic Asylum.**—PAINTING.—The Committee of Visitors invite persons to tender for the "outside painting" of the new portion of asylum buildings and the chaplain's house. Full particulars can be obtained from the Engineer on application at the Asylum. Mr. Thomas M. Davenport, Clerk to the Committee of Visitors, County Hall, Oxford.

JUNE 13.—**Wrexham.**—DECORATING, ETC.—Wrexham Education Committee invite tenders for the cleaning and decorating required at the Victoria Schools and at the caretaker's house adjoining thereto. Form of tender, etc., may be obtained at the Borough Surveyor's office, Willow-road.

JUNE 15.—**Hastings.**—PAINTING.—Hastings Education Committee invite tenders (from local tradesmen) for painting, limewashing, repairs, etc., at several of the schools during the summer holidays. Specifications may be obtained at the office of the Borough Surveyor, Town Hall, Hastings.

JUNE 16.—**London, E.C.**—PAINTING, ETC.—The Streets Committee of the Corporation of London invite tenders for painting, etc., at the various underground conveniences in the City. See advertisement in this issue for further particulars.

* JUNE 16.—**Poplar.**—PAINTING AND CLEANING WORK.—The Managers of the Poplar and Stepney Sick Asylum District invite tenders for painting and cleaning work. See advertisement in this issue for further particulars.

JUNE 17.—**Camberwell.**—PAINTING, ETC.—The B.C. invite tenders for outside painting, decorating, etc., of the Town Hall, Peckham-road. Forms of tender can be obtained from Mr. William Oxtoby, Borough Engineer, Town Hall, Camberwell.

JUNE 18.—**Southend.**—PAINTING.—Southend-on-Sea Education Committee invite tenders for painting the exterior of the Leigh-road School buildings. Specification, etc., can be obtained from Mr. E. J. Elford, C.E., Borough Engineer, upon deposit of cheque for 1*l*. 1*s*.

JUNE 20.—**Holyhead.**—COLOURING, ETC.—Colouring, painting, varnishing, polishing, and decorating of the "Hyfrydle" C.M. Chapel, Holyhead. Specifications may be obtained at office of Mr. Jos. Owen, F.R.I.B.A., architect and surveyor, Exchange-chambers, Holyhead.

* JUNE 22.—**Dartford.**—REPAIRS, PAINTING, ETC.—The Dartford Joint Hospital Committee invite tenders for repairs, painting, etc., at Joint Infectious Hospital, Dartford. See advertisement in this issue for further particulars.

JUNE 30.—**Beverley.**—PAINTING.—East Riding of Yorkshire C.C. Education Committee invite tenders for the painting and cleaning of certain schools in the Riding. A list of the schools intended to be painted or cleaned may be obtained on application to Mr. John Bickerstеth, Clerk to the East Riding Education Authority, County Hall, Beverley.

NO DATE.—**Batley.**—PAINTING.—Batley Corporation invite tenders for painting railings round small plantation in Market-place, also tenders for limewashing cellars at Town Hall. Particulars from Mr. James Warden, Town Hall Keeper.

## ROADS, SANITARY, AND WATER WORKS.

JUNE 8.—**Barrow-on-Humber.**—RAISING HEADSTONES, ETC.—Tenders are required for raising headstones and kerbing in the cemetery. For particulars see Mr. Stoker, Barrow-on-Humber.

JUNE 9.—**Forres.**—LAYING SETTS.—The T.C. of Forres invite offers for supplying and laying granite setts, and also relaying granite crossings. Specifications for the work may be obtained on application to Mr. John Rankine, Burgh Surveyor.

JUNE 8.—**Hutton, Billericay.**—SEWERS.—The R.D.C. invite tenders for the construction at Hutton Village of about 276 yds. of 6-in. and 155 yds. of 9-in. glazed stoneware pipe sewers, etc. Plans, etc., to be seen at Mr. S. J. Shelley's, Junction-road, South Weald.

JUNE 9.—**Bedworth and Foleshill.**—DRAINAGE WORK.—Foleshill R.D.C. invite tenders for Bedworth and Foleshill drainage work for twelve months ending June, 1909. Forms of tender may be obtained, and specification seen, on application to the Surveyor, Union Buildings, Foleshill.

JUNE 9.—**Broadstairs.**—TAR PAINTING.—Broadstairs and St. Peter's U.D.C. invite tenders for tar painting roads within their district. The approximate area of roads to be treated is 18,000 super. yds. Further particulars and form of tender may be obtained from Mr. Howard Hurd, C.E., Town Surveyor, Broadstairs.

JUNE 9.—**Chester-le-Street.**—STREET WORKS.—Chester-le-Street R.D.C. Highways Committee invite tenders for making-up private streets at Chester-le-Street and Pelton. Plans, etc., may be seen, and schedule of quantities, together with a form of tender, obtained, at the office of Mr. Geo. W. Ayton, Highway Surveyor, Chester-le-Street.

JUNE 9.—**Crewe.**—LABOUR AND MATERIALS.—The Crewe T.C. invite tenders for the repaving of Goddard-street, within the Borough, in accordance with plans etc., which may be seen, and all other necessary information obtained, upon application to Mr. G. Eaton-Shore, Borough Surveyor, Earle-street, Crewe. A deposit of 1*l.* will be required.

JUNE 9.—**Hunslet.**—ROAD WORKS.—Hunslet R.D.C. invite tenders for the repair of about 560 yds. of highway in Woodlesford, near Leeds. Specification, etc., may be seen at office of Mr. W. B. Pindar, Clerk, Council Office, Glasshouse-street, Hunslet, Leeds.

JUNE 9.—**Southall.**—ROAD WORKS.—Southall-Norwood U.D.C. invite tenders for the making-up of the following roads:—West End-road, Northcote-avenue. Plans, etc., may be seen, and schedule of quantities and forms of tender obtained, at office of Mr. Reginald Brown, A.M.Inst.C.E., F.S.I., etc., Public Office Southall.

JUNE 9.—**Tanfield.**—SEWER EXTENSION.—Tanfield U.D.C. invite tenders for the extension of a 9-in. sanitary pipe sewer from the west end of Burnopfield to Leazes, a distance of 320 yds. or thereabouts. Specifications, etc., may be had on application to Mr. R. Heslop, Surveyor, Burnopfield.

JUNE 10.—**Greystones.**—ROAD, ETC.—Tenders are invited for making new road, laying sewers, etc., on the La Touche Estate, Greystones Co. Wicklow. Drawings, etc., can be seen on application to Mr. R. M. Butler, A.M.Inst.C.E.I., Dawson-chambers, Dublin.

JUNE 10.—**Leeds.**—PAVING, ETC.—Leeds Highways Committee invite tenders for the paving and flagging of streets. Drawings may be seen at the City Engineer's office, Municipal Buildings. Forms of tender, etc., may be obtained, and copies of the documents forming the contract inspected, on application at the Highways Office, 155, Kirkstall-road, Leeds.

JUNE 10.—**Market Bosworth.**—SEWER.—Market Bosworth R.D.C. invite tenders for providing and laying about 70 yds. of 6-in. socket pipe sewer, together with a manhole, in the Market-place, Market Bosworth. Plans etc., may be seen at the residence of Mr. Walter Morton Sykes, Surveyor to the Council, 107, Chapel-street, Ibstock.

JUNE 11.—**Castleford.**—ROAD WORKS.—The Castleford U.D.C. invite tenders for the recovering with stone, Smawthorne-lane, Castleford, in accordance with particulars to be seen on application to Mr. W. Green, Surveyor to the Council.

JUNE 11.—**St. Pancras.**—SEWER, ETC.—The Public Health Committee invite tenders for the construction of about 400 ft. run of 12-in. pipe sewer, manholes, gullies, etc., in the new street connecting Mabledon-place and Burton-street N.W. Drawings, etc., may be seen, and form of tender, etc., obtained, on application to the Borough Engineer at the Town Hall, Pancras-road, N.W.

JUNE 11.—**St. Pancras, London.**—TAR MACADAM.—The Highways, etc., Committee invite tenders for the laying down of tar macadam in certain streets in the borough. Further particulars may be obtained upon application to the Borough Engineer and Surveyor at the Works Department, Town Hall Pancras-road, N.W.

JUNE 12.—**Silloth and Eastcote.**—SEA WALL.—Holme Cultram U.D.C. invite tenders for the erection of a cement concrete sea wall and apron 1,450 lin. yds. in length, between Silloth and Eastcote. Plans, etc., can be seen, and all information obtained, on application to Mr. George Armstrong, engineer, etc., 24, Bank-street, Carlisle.

JUNE 12.—**Tylorstown.**—CULVERT.—Rhondda U.D.C. invite tenders for the construction of 220 lin. yds. of masonry culvert, 2 ft. 6 in. by 3 ft. 6 in., at Tylorstown. Plans may be seen, and forms of tender obtained, at the Surveyor's office, Public Offices, Pentre, Rhondda, upon depositing the sum of 1*l.* 1s.

JUNE 13.—**Ashford.**—SEWAGE DISPOSAL.—The Industrial School Committee of the Kent C.C. invite tenders for the construction of filter bed, etc., to be carried out at the Industrial Schools, Kingsnorth, near Ashford. Plans, etc., can be seen and obtained at the County Surveyor's office, West Borough-chambers Maidstone.

JUNE 13.—**Gordon.**—WATER SUPPLY.—Works in connexion with the water supply, drainage, and sewage disposal for the proposed infectious Diseases Hospital at Gordon, Berwickshire. Plans, etc., may be seen, and schedule of quantities had, on application to Mr. T. R. Atkinson, civil engineer, Earlston.

JUNE 13.—**Gorseinon.**—WATER MAINS.—Swansea R.D.C. invite tenders for laying 4-in. and 3-in. water mains for a distance of 4,221 yds., or thereabouts, from Gorseinon to Penllergaer, etc. Plans, etc., may be inspected at the Council Offices, or at the offices of Mr. T. Trevor Williams, surveyor and engineer, Alexandra-road, Swansea, from whom any further particulars may be obtained.

JUNE 13.—**Methil.**—SEWER PIPE, ETC.—Supplying and laying of about 600 lin. yds. of sewer pipe, 10 in. in diameter, and for the construction of manholes at Cross Roads, near Methil, for the Kirkcaldy District Committee of the Fife C.C. Plans may be seen, and copies of the specification, etc., obtained, at the office of Mr. William Lockhart, civil engineer, 220, High-street, Kirkcaldy, on payment of a deposit of 10s.

JUNE 13.—**Reigate.**—SEWERS.—The T.C. of Reigate invites tenders for the construction of storm-water relief sewers in Linkfield-lane, Redhill, and Bell-street, Reigate, in accordance with the plans, etc., prepared by Mr. Fred. T. Clayton, C.E., the Borough Surveyor. Bills of quantities, etc., can be obtained on application to the Borough Surveyor, at his office, at the Municipal Buildings, Reigate, where the plans, etc., may also be inspected.

JUNE 15.—**Allonby and Westnewton.**—WATER SUPPLY.—The R.D.C. of Wigton invite tenders for Allonby and Westnewton water supply (two contracts). Specifications, etc., may be obtained from Mr. J. F. W. Ritson, Clerk to the said Council, Wigton, on deposit of 2*l.* (cheque only).

JUNE 15.—**Bristol.**—PLAYGROUND RELAYING.—The Bristol Education Committee invite tenders for relaying and refacing playgrounds of the Council Schools. Copies of the specifications may be obtained from Mr. Peter Addie, Exchange, Corn-street, Bristol.

JUNE 15.—**Camberwell.**—ROAD WORKS.—The B.C. invite tenders for kerbing, channelling, York paving, foundations for asphalt paving, and roadwork in the following "new streets," viz.:—Ryedale-road, Forest Hill-road, Elland-road, Peckham Rye (east side). Forms of tender can be obtained from Mr. William Oxtoby, Borough Engineer, Town Hall, Camberwell.

JUNE 15.—**Spennymoor.**—STREET WORKS.—Spennymoor U.D.C. invite tenders for the street-making, etc., required in the making of Ruby-terrace and Ruby-terrace streets A. and B. Plans, etc., may be seen, and forms of tender obtained, on application to Mr. C. R. Spencer, Surveyor to the Council, Silver-street Spennymoor.

JUNE 15.—**West Calder.**—CEMETERY EXTENSION.—West Calder Parish Council invite offers for an extension to West Calder Cemetery. Plans can be seen, also schedule of quantities, etc., may be had, on application to Mr. William Millar, Clerk, Knowe Tap, West Calder.

JUNE 16.—**Nelson and Caerphilly.**—STREET WORKS.—Caerphilly U.D.C. invite tenders for:—(1) Private Street Works Act, 1892, Nelson; (2) constructing about 290 yds. of 9-in. surface-water drain, with contingent works, in Pontygwindy-road, Caerphilly. Plans, etc., may be seen, and forms of tender obtained, on application to Mr. Alfred O. Harpur, surveyor, upon depositing the sum of 1*l.* 1s.

JUNE 16.—**Oystermouth.**—WIDENING, ETC., ROADS.—Oystermouth U.D.C. invite tenders for the following street works within their district, viz.:—(1) Widening and improving Dunns-lane, Albert-place, and Gower-place; (2) widening and improving Southward-lane and Thomas Hill. Plans, etc., may be seen, and copies of the schedules of quantities obtained, at the Council Offices, upon the deposit of 1*l.* 1s.

JUNE 18.—**Mitcham.**—MAKING-UP.—Croydon R.D.C. invite tenders for making-up Sinboro'-road, in the Parish of Mitcham. Plan, etc., may be seen, and form of tender obtained, on application to Mr. R. M. Chart, Surveyor to the Council, Town Hall, Croydon.

JUNE 22.—**Scunthorpe.**—WATER MAINS.—Scunthorpe U.D.C. invite tenders for the supplying and laying of water mains, hydrants, valves, etc. Plans, etc., may be seen, and any further information given, upon application to Mr. Walter F. Bickford, Engineer and Surveyor to the Council, Engineer and Surveyor's Office, Home-street, Scunthorpe. Copies of the forms of tender, etc., may be obtained upon payment of a sum of 1*l.* 1s.

JUNE 23.—**Kilkeel.**—WATERWORKS.—The Kilkeel R.D.C. invite tenders for the construction of a complete system of waterworks for Kilkeel. Plans, etc., may be seen, and a copy of the specification, etc., can be obtained, upon payment of 1*l.* 1s., at the office of the engineers, Messrs. Swiney & Croasdaile, M.Inst.C.E., Avenue-chambers, Belfast.

* JUNE 24.—**London, S.W.**—WATER MAIN.—The Guardians of the St. George's Union invite tenders for supplying and fixing new cold water main at their offices, Princes-row, Buckingham Palace-road, S.W. See advertisement in this issue for further particulars.

JUNE 25.—**Tamworth.**—SEWAGE WORKS.—Tamworth Joint Sewage-Disposal Committee invite tenders for constructing an outfall sewer, one mile in length, of stoneware and cast-iron pipes, together with manholes and ventilating shafts; laying a 17-in. cast-iron rising main, 1,944 yds. long; constructing pump sumps and foundations of pumping station; three circular open tanks; detritus and overflow chamber; eight bacteria filters, and other incidental works in connexion therewith, in accordance with the drawings and specification prepared by the engineers, Mr. Henry J. Clarson and Mr. F. E. G. Bradshaw, from whom specifications, bills of quantities, and form of tender may be obtained upon payment of 3*l.* 3s.

NO DATE.—**Halifax.**—COMPLETION OF TERRACE.—The completion of back Glen-terrace, Clover Hill. Plans, etc., may be seen, and quantities obtained, on application at offices of Mr. Lister Coates, Surveyor, 10, Central-street, Halifax.

## STONE, MATERIALS, AND STORES.

JUNE 8.—**Kingston.**—GRANITE.—The Guardians of the Kingston Union invite tenders for the supply of 100 tons of best blue Guernsey granite spalls, to be delivered at the Workhouse, Coombe-road, Kingston-on-Thames. Mr. Jas. Edgell, solicitor, Clerk to the Guardians, Union Offices, Coombe-road, Kingston-on-Thames.

JUNE 8.—**Winterton.**—GRANITE.—The U.D.C. of Winterton invite tenders for a supply of 600 tons of granite; also tenders and samples for 200 tons of well-broken slag and 50 tons of screenings; also tenders for hauling the granite. Mr. W. Holgate Cross, Clerk to the Council, Queen-street, Winterton.

JUNE 9.—**Belfast.**—FLAGS.—Belfast Works Committee invite tenders for the supply of three cargoes of flags. Forms of tender and particulars may be obtained in the Superintendent of Works Office, City Hall.

JUNE 9.—**Chelmsford.**—GRANITE.—For Guernsey granite and team labour. Forms of tender may be obtained at office of Mr. W. Smith, Town Clerk, Municipal Offices, 16, London-road, Chelmsford, or will be sent by post on receipt of addressed and stamped envelope. Any further information may be obtained from the Borough Surveyor, 16, London-road, Chelmsford.

JUNE 9.—**Hetton.**—ROAD MATERIALS.—The U.D.C. of Hetton invite tenders for supplying road materials. Further particulars, together with form of tender, may be obtained from the Surveyor of the Council, Mr. John Harding, Hetton-le-Hole, R.S.O.

JUNE 9.—**Northfleet.**—STORES.—The U.D.C. of Northfleet invite tenders for road materials, etc. No forms of tender or contract can be supplied, but may be inspected at the Council Offices, The Hill, Northfleet.

* JUNE 10.—**Laindon (Essex).**—BALLAST, CEMENT, ETC.—The Guardians of the Parish of Poplar invite tenders for supply of ballast, Cement, and polling boards, etc., to be delivered to branch Workhouse, Sumpners Farm, Laindon, Essex. See advertisement this issue for further particulars.

JUNE 12.—**Bristol.**—ARTICLES.—The Guardians of the Poor invite tenders for the supply of articles. Forms to be obtained at office of Mr. J. J. Simpson, Clerk, St. Peter's Hospital, Bristol.

JUNE 12.—**London.**—MATERIALS.—The Bengal and North-Western Railway Company, Ltd., Directors invite tenders for the supply and delivery of:—(*a*) Wrought iron; (*b*) steel material as per specification to be seen at the Company's offices. For each specification a fee of 10s. will be charged, which cannot, under any circumstances be returned. Mr. Alexander Izat, Managing Director, 237, Gresham House, Old Broad-street, London, E.C.

JUNE 12.—**Raunds.**—ROAD MATERIAL.—Raunds U.D.C. invite tenders for the supply of 315 tons of broken granite, 645 tons of slag. Forms of tender may be obtained from Mr. Thomas Yorke, engineer and surveyor, Clare-street, Raunds.

JUNE 13.—**Cornsay.**—MATERIALS.—The supply of materials required at Cornsay Colliery for the twelve months ending June 30, 1909, comprising pit timber, iron, steel, and metal castings, wire ropes, nails, and grease. Forms of tender may be had on application to Messrs. Ferens & Love, Market-place, Durham.

JUNE 13.—**Trimdon Grange.**—COLLIERY TIMBER.—Walter Scott, Ltd., invite tenders for the supply of all kinds of colliery timber from July 1 to June 30, 1909, to their East Hetton, Trimdon Grange, and Trimdon Collieries. Forms of tender may be obtained on application to the Storekeeper.

JUNE 15.—**Aberdare.**—STORES.—The Directors of the Powell Duffryn Steam Coal Company, Ltd., invite tenders for the supply of stores, etc. Forms of tender and all particulars can be obtained on application to the Stores Manager, Aberaman Offices, near Aberdare.

* JUNE 15.—**West Ham.**—COAL AND COKE.—The West Ham B.C. invite tenders for supply of coal and coke. See advertisement in this issue for further particulars.

JUNE 16.—**Reigate.**—GRANITE, ETC.—Reigate B.C. invite tenders for granite, macadam, kerb, tar paving, ragstone, flints, etc. Specifications may be seen, and forms of tender obtained, upon application to Mr. Fred. T. Clayton, the Borough Surveyor, the Municipal Buildings, Reigate.

JUNE 16.—**Walton-on-Thames.**—BROKEN GRANITE.—Walton-on-Thames U.D.C. invite tenders for the supply of 1,200 tons of 2-in. broken granite. Specification and form of tender may be obtained on application to Mr. H. Wilds, Surveyor, Council Offices, Walton-on-Thames.

JUNE 17.—**Durban, Natal.**—SEWERAGE PIPES.—Durban Corporation invite tenders for stoneware sewerage pipes, with a quantity of junctions. Specifications can be obtained from Mr. W. H. Radford, C.E., Albion-chambers, Nottingham, Consulting and Representative Engineer to the Corporation, on deposit of 1*l.* 1s.

JUNE 18.—**Sligo.**—MOORING BUOYS, ETC.—Sligo Harbour Commissioners invite tenders for two mooring buoys, chain cables, and sinkers. Specification may be obtained on payment of 1*l.* (not returnable), from Mr. Thos. J. Mercer, Secretary, Harbour Office, Sligo.

JUNE 20.—**Feltham.**—GRANITE.—Feltham U.D.C. invite tenders for the supply of about 800 tons of granite. Forms of tender may be obtained from the surveyor, Mr. R. T. Stewart, Town Hall-chambers, Feltham.

JUNE 20.—**Trimdon.**—MATERIALS.—The Trimdon Coal Company invite tenders for the supply of timber, oils, grease, and general stores, etc., for six months. For forms of tender application to be made to Mr. I. Penney, Deaf Hill Colliery, Trimdon Grange, S.O.

JULY 1.—**Manchester.**—CAST-IRON PIPES.—Manchester Corporation Waterworks Committee invite tenders for the supply of about 13,300 tons of cast-iron pipes and special castings, 44 and 40 in. diameter. Specification, etc., may be obtained on application to Messrs. G. H. Hill & Sons, civil engineers, Albert-chambers, Albert-square, Manchester, and 3, Victoria-street, Westminster, upon receipt of cheque for 2*l.* 2s.

JULY 1.—**Manchester.**—VALVES, ETC.—Manchester Corporation Waterworks Committee invite tenders for the supply of:—Manual stop valves, 40 in. diameter; automatic stop valves, 40 in. diameter; reflux valves, 44 in., 40 in., and 36 in. diameter; air valves; and ironwork in connexion therewith. Specification, etc., may be obtained on application to Messrs. G. H. Hill & Sons, civil engineers, Albert-chambers, Albert-square, Manchester, and 3, Victoria-street, Westminster, upon receipt of cheque for 2*l.* 2s.

NO DATE.—**Donegal.**—TURNTABLES.—County Donegal Railways Joint Committee invite tenders for the construction and delivery of two turntables. Particulars may be had on application to the Engineer, County Donegal Railways Joint Committee, Stranorlar, Co. Donegal.

# Public Appointments.

| Nature of Appointment. | By whom Advertised. | Salary. | Application to be in |
|---|---|---|---|
| *ASSISTANT SURVEYOR | Macclesfield Borough Council | 120*l.* per annum | June 18 |
| *ASSISTANT INSTRUCTOR (BUILDING TRADE DEPT.) | Leicester Munici. Tech. Schl. | 130*l.* per annum | June 22 |

# Auction Sales.

| Nature and Place of Sale. | By whom Offered. | Date of Sale |
|---|---|---|
| *FREEHOLD PROPERTY, ST. GEORGE-IN-THE-EAST—At the Mart | Ellis & Sons | June 12 |
| *FREEHOLD BUILDING ESTATE, CHASE PARK, ENFIELD—At the Mart | Walton & Lee | June 16 |
| *FREEHOLD BUILDING ESTATE, WEMBLEY—At the Mart | Walton & Lee | do. |
| *FREEHOLD LAND, WEST CROYDON—Greyhound Hotel, Croydon | Douglas Young & Co. | do. |
| *DEALS, BATTENS, ETC.—Great Hall, Winchester House, Old Broad-street, E.C. | Churchill & Sims | June 17 |
| *FREEHOLD BUSINESS PREMISES, CHELSEA—Chelsea Town Hall | Andrews & Hitch | June 18 |
| *WOODWORKING PLANT AND MACHINERY, SHREWSBURY—Saw Mills, Minsterley | Fuller, Horsey, Sons, & Cassell | do. |
| *BUILDING LAND, GREENFORD, MIDDLESEX—At the Mart | May & Rowden | June 22 |
| *BUILDER'S PLANT AND MACHINERY, ISLEWORTH—On the Premises | Fuller, Horsey, Sons, & Cassell | June 24 |
| *FREEHOLD PROPERTY, PECKHAM—At the Mart | Farebrother, Ellis, & Co. | July 9 |
| *FREEHOLD SITES AND BUILDINGS, CARDIFF—Old Town Hall, Cardiff | Douglas Young & Co | do. |

PATENTS.—*Continued from page 676.*

16,390 of 1907.—J. MORGAN: *Draught-increasing Grating for Domestic and Industrial Fire-places.*

This relates to a grating to be fixed at the side, end, or centre of a domestic or industrial fire-grate. The appliance comprises flat bars in a horizontal position fixed at their ends to two vertical plates leaving a clear space between each bar. In cross-section the bars are in a sloping position similar to a louvre. The bottom bar is extended across the full width of the vertical plates, and the others from the inner to within about ¼ in. of the outer edges of the said plates. The grating is placed in position on the fire-grate with the outer edges of the vertical plates and the bottom bar fixed in contact with the side or end wall. For the centre of an industrial fire-grate two gratings may be fixed back to back. The top of the grating is raised above the surface of the fire. The appliance may also form part of the side or end walls of a fire-grate. The invention may be moulded or cast as part of the sides or end of a new fire-grate.

18,451 of 1907.—P. ROMBOLD: *Machine for the Automatic Cutting of Unburnt Tiles.*

This relates to a machine for the automatic cutting of unburnt tiles, the essential feature of which is that the wires effecting the cutting are moved by means of chains or the like in a guide corresponding with the form of the tiles to be manufactured. Endless chains are arranged above and below the material from which the tiles are made, to which are fastened the cutting wires, while guiding noses are arranged on one side of the chains which are adapted to engage a guiding groove of a form corresponding with that of the tile to be produced; the chains carrying the cutting wires are uniformly actuated and temporarily stopped by a detent lever released by friction rollers worked by the material from which the tiles are made, and are moved at the same speed by a main shaft driven by a belt pulley, while the uninterruptedly running belt pulley which is loosely arranged on the main shaft is connected with the main shaft through a friction jaw coupling by which, when the cutting wires are stopped by the detent lever, the main shaft is also brought to a standstill. In order to form the nose of the tile the stream or string of material from which the nose is formed is thrown into and out of gear by means of friction rollers worked by the materials from which the tiles are made, the device cutting off the material for the nose being held in its cutting position by a detent lever, the latter being released by means of intermediate levers simultaneously with another detent lever which holds the cutting wire chains out of action, the nose-cutting device being thrown out of gear for a short time by a means intermittently operated through the shaft of the said friction rollers, so that a piece of the rib forming the nose remains standing while the cutting wires at the same time cut off the tile. A chain wheel is arranged on the shaft of the friction rollers in connexion with a second chain wheel connected to the device for cutting the nose, the first said chain wheel being connected with this shaft through a friction jaw coupling, which allows of making this chain wheel stand still on the continuously rotating shaft during the time the device for cutting the nose is stopped.

1,927 of 1908.—W. EDWARDS: *Open Fireplaces.* This relates to removable fire backs for open fireplaces, and consists in providing a metal hood or shield which is placed in the chimney behind and just above the fireplace, preferably resting upon the top plate of the latter, the said hood or shield fitting easily within the chimney so that it may be readily removed or adjusted in position when required. The hood or shield is made of any suitable metal or material, and is curved forwards at its upper end, the two sides being formed of vertical walls or wings and a flange extending around the lower edge to form a base or support. This flange also ensures a space being left between the hood or shield and the back of the chimney, the said space receiving any down draught or soot from the chimney and preventing the entrance of the same into the fireplace or room. As the hood or shield becomes heated it creates a draught by drawing the air up the chimney, thus preventing down draught and consequently smoky chimneys. In addition to the hood or shield a vertical plate may be employed formed with side wings or flanges for enclosing or collecting a greater amount of the heated gases, and placed between the hood and the fire, which plate, becoming heated, retains such heat and throws it forward into the room. A draught plate or blower is also fixed at an angle across the top of the fireplace, the same being curved inwards for preventing the escape of the fumes.

10,065 of 1907.—W. H. COWARD: *Manufacture of Waterproof Paving Slabs, Building Blocks, Roof Coverings, Electric Insulators, and the like.*

This relates to a method of manufacturing paving slabs, building blocks, and the like, consisting in mixing broken stone with a bituminous mass in the form of finely-divided powder prepared from a mixture of quicklime, and a bituminous material slaked in a moist atmosphere, and subjecting the mass to a high temperature.

16,112 of 1907.—H. A. SQUIRE: *One-lever Locks and the like.*

This relates to one-lever and tumbler locks for use in cabinet locks, mortise locks, padlocks, and latches, and consists in furnishing the lever with a projecting edge or flange preferably extending along the front side of face of the lever. This projecting flange is formed by bending the lower edge of the lever so as to form a seating for the spring. The latter consists of a piece of bent, flat metal somewhat of angle shape, which at one end is adapted to bear against the top of the lock case as usual, but then passes round lever stump and bears against the projecting edge or flange of lever aforesaid, preferably for its entire length, and terminates with a slight bend round the end of the said projecting flange. The lever stump prevents the spring being displaced in an upward direction, while the said slightly-bent edge of spring prevents it being displaced in a downward direction. The lever or tumbler may be made of thinner metal than usual, and yet not cut into the key, as the latter in turning bears against the flange part of lever.

## SOME RECENT SALES OF PROPERTY.

### ESTATE EXCHANGE REPORT.

May 19.—By BLACKWALL, HAYES, & Co. (at Llanrwst).

Penmachno, Carnarvon.—A portion of the Hafodwryd Estate, 200 acres, f. (in lots) .. £5,015

May 25.—By BATCHELAR & SON.

Marylebone.—40, Hereford-st., u.t. 12 yrs., g.r. nil., y.r. 38*l.* 135

Union-st., l.g. rents 27*l.* 7s., u.t. 12 yrs., g.r. nil 165

By BENJAMIN NORMAN.

Gray's Inn-road.—1 and 2, Robert-st., f., y.r. 126*l.* 1,180

By EDWARD WOOD.

Kew.—5 and 6, Maze-rd., u.t. 72 yrs., g.r. 14*l.*, y.r. 80*l.* 625

Thornton Heath.—72, Richmond-rd., f., w.r. 33*l.* 16s. 290

Harringay.—5, Terront-rd., u.t. 77 yrs., g.r. 5*l.* 10s., e.r. 30*l.* 225

Wanstead.—St. Margaret's-rd., The Acacias, f., e.r. 40*l.* 455

By WELFORD, DIXON, & WINDER.

West Croydon.—30 to 40 (even), Neville-rd., f., w.r. 124*l.* 16s. 1,100

Norwood.—24, Albert-rd., f., e.r. 30*l.* 270

By STIMSON & SONS.

Vauxhall.—41, South Lambeth-rd. (s.), u.t. 62 yrs., g.r. 14*l.*, y.r. 55*l.* 450

Forest Hill.—104 to 112 (even), Malham-rd., u.t. 54¼ yrs., g.r. 17*l.* 10s., w.r. 117*l.* 500

Walthamstow.—38, Granville, f., w.r. 30*l.* 220

128 to 140 (even), Chelmsford-rd., f., w.r. 139*l.* 2s. 840

14, Alexandra-rd., f., w.r. 20*l.* 140

53 to 65 (odd), Alexandra-rd., f., w.r. 145*l.* 12s. 980

11 to 25 (odd), Sylvester-rd., f., w.r. 167*l.* 14s. 1,050

10 to 16 (even), Herbert-rd., f., w.r. 83*l.* 4s. 480

Poplar.—53 to 59 (odd), Stainsby-rd., u.t. 35 yrs., g.r. 13*l.*, w.r. 141*l.* 14s. 420

8 and 9, Paris-ter., u.t. 56 yrs., g.r. 6*l.*, w.r. 59*l.* 16s. 275

Bow.—120, Turner's-rd., u.t. 61¼ yrs., g.r. 5*l.*, w.r. 33*l.* 16s. 215

1 and 3, Streathfield-st., u.t. 62 yrs., g.r. 8*l.*, w.r. 72*l.* 16s. 500

Wapping.—7 and 8, Church-ct., f., w.r. 36*l.* 8s. 150

Willesden.—70, 76, and 78, Villiers-rd., f., y. and w. rents 94*l.* 1,100

By E. A. JEPHCOTT (at Alcester).

King's Coughton, Warwick.—King's Coughton House, farm, etc., 84 a. 3 r. 30 p., f. 3,872

Haselor, Warwick.—The Cross Lanes Farm, 74 a. 0 r. 36 p., f. 2,132

By WYATT & SON (at South Hayling).

South Hayling, Hants.—Victoria-av., three plots of land, f. 170

May 26.—By BROWETT & TAYLOR.

Norwood.—Langley-rd., f.g. rents 10*l.* 10s., reversion in 93 yrs. 254

Forest Hill.—3, Allenby-rd., f., y.r. 40*l.* 480

4, 14, 16, and 18, Allenby-rd., u.t. 68 yrs., g.r. 32*l.*, y.r. 166*l.* 1,115

15, Garlies-rd., u.t. 68 yrs., g.r. 8*l.*, y.r. 38*l.* 280

4 and 20, Tyson-rd., u.t. 64 yrs., g.r. 30*l.*, y.r. 130*l.* 810

Beckenham, Kent.—7, Park-rd., u.t. 62 yrs., g.r. 20*l.*, e.r. 130*l.* 950

Catford.—360, Stanstead-rd., u.t. 70 yrs., g.r. 8*l.*, y.r. 34*l.* 185

By C. RAWLEY CROSS & CO.

Barnes.—Castlenau, The Lodge, f., p. 525

By HAMPTON & SONS.

Barnes.—Brick Close-gdns., 2 acres, c. 600

By ROGERS, CHAPMAN, & THOMAS.

City.—Eastcheap, l.g.r. 1,220*l.*, reversion in 61 yrs. 31,000

Pimlico.—Ranelagh-rd., l.g.r. 32*l.*, u.t. 61¼ yrs., g.r. nil. 380

Clarendon-st., l.g.r. 9*l.*, u.t. 27 yrs., g.r. 1*l.* 160

By RUTLEY, SON, & VINE.

Hampstead-rd.—167, Stanhope-st., u.t. 30 yrs., g.r. 2*l.*, p. ..... £470
142, 144, and 146, Stanhope-st., u.t. 30 yrs., g.r. 6*l.*, y. and w.r. 140*l.* 16s. ..... 890
20, Mornington-cres., u.t. 11 yrs., g.r. 8*l.*, y.r. 65*l.* ..... 120
St. Pancras.—14, Ampthill-sq., u.t. 35 yrs., g.r. 12*l.*, y.r. 75*l.* ..... 500
Leyton (Essex).—25 and 27, Thornhill-rd., f., w.r. 52*l.* ..... 435

By TOWERS, ELLIS, & Co.

Bayswater.—43, Richmond-rd., u.t. 38 yrs., g.r. 8*l.*, e.r. 60*l.* ..... 325

By FREDERICK WARMAN.

Islington.—26, Clarence-st., f., y.r. 40*l.* ..... 490
Bloomsbury.—48, Coram-st., u.t. 22 yrs., g.r. 45*l.*, w.r. 164*l.* ..... 480

By BERTRAM HUTCHINSON (at Thrapston).

Winwick, Hunts.—Two farms, 443½ acres, f. .... 4,745

By WILKINSON, SON, & WELCH (at Brighton).

Brighton.—4, Lewes-cres., f., y.r. 150*l.* ..... 1,670

By J. C. PLATT (at Hammersmith).

Hammersmith.—29, Beadon-rd. (s.), f., y.r. 46*l.* 510
18, Wolverton-gdns., u.t. 52 yrs., g.r. 5*l.*, y.r. 40*l.* ..... 430

By DONKIN & SON (at Newcastle-upon-Tyne).

Stannington, Northumberland. — Bog Hall Farm, 177 acres, f. ..... 4,750

May 27.—By A. R. PEACEY.

Camden Town.—80, Oseney-cres., u.t. 41 yrs., g.r. 8*l.*, y.r. 40*l.* ..... 300

By ROBINS, GORE, & MERCER.

Marylebone.—48, Upper Baker-st., u.t. 8 yrs., g.r. 40*l.*, y.r. 115*l.* ..... 370
14, Upper Gloucester-pl., u.t. 8 yrs., g.r. 40*l.*, y.r. 85*l.* ..... 110
6, 7, 8, 9, and 13, Great Quebec-st., u.t. 5 yrs., g.r. 225*l.*, w.r. 520*l.* 16s. ..... 315

By SALTER, REX, & Co.

Kentish Town.—23 Caversham-rd., u.t. 40 yrs., g.r. 5s., y.r. 62*l.* ..... 600

By ROBERT TIDEY & SON.

Wood Green.—2, Lawn-cottages, f., p. ..... 340
Chelsea.—Hasker-st., l.g. rents 21*l.*, u.t. 35 yrs., g.r. nil ..... 270

By GEO. TROLLOPE & SONS.

Westminster.—67, 69, and 71, Victoria-st. (s.), u.t. 57½ yrs., g.r. 200*l.*, y.r. 1,010*l.* ..... 3,000

By T. B. WESTACOTT.

Kentish Town.—62, Hawley-rd. (s.); and 28, Hartland-rd., u.t. 30¼ yrs. g.r. 6*l.* 6s., w.r. 136*l.* 10s. ..... 320
30, Hartland-rd., u.t. 30¼ yrs., g.r. 5*l.*, y.r. 28*l.* ..... 210
Wood Green.—14, Caxton-rd., f., y.r. 20*l.* .... 255
Hampstead Road.—8, Rutland-st., f., y.r. 55*l.* 680
Kentish Town.—54, Grafton-rd., u.t. 13 yrs., g.r. 5*l.*, y.r. 35*l.* ..... 115

By JAMES HARRIS & SON (at Petersfield).

Langrish, Hants.—A portion of the Ramsden Estate, farms, etc., 490 acres, f. (in lots) .. 12,860
Ramsdean, Hants.—The impropriate tithe rent-charge, 190*l.* 0s. 1d. ..... 900

By RENDELL & SAWDYE (at Newton Abbot).

Lustleigh, Devon.—Rockmead, f.g.r. 12*l.*, reversion in 983 yrs. ..... 300

By JOHN M. LEEDER & SON (at Bridgend).

Bridgend, Glamorgan. — Australian-ter. and Cemetery-rd., f.g. rents 64*l.* 12s. 7d., reversion in 64 yrs. ..... 1,590
Australian-ter., freehold and copyhold building sites, 4½ acres ..... 565

By BELLAMY & Co. (at Putney).

Putney.—24, Carmalt-gdns., u.t. 76 yrs., g.r. 10*l.*, e.r. 55*l.* ..... 320

By SEDGWICK, SON, & WEALL (at Pinner).

Pinner, Middlesex.—Two enclosures of freehold land, 7½ acres ..... 2,300

May 28.—By H. J. CHEFFINS.

Saffron Walden, Essex.—The Vineyard, 12 acres, f. ..... 4,000

By FAREBROTHER, ELLIS, & Co.

Harrow.—Lower-rd., Ortygia, f., y.r. 105*l.* .... 1,500

By C. C. & T. MOORE.

Mile End.—52, Cambridge-rd. (s.), f., e.r. 50*l.* .. 525
Canning Town.—133, Barking-rd. (s.), u.t. 73 yrs., g.r. 10*l.*, y.r. 50*l.* ..... 300

By NEWBON, SHEPHARD, & EDWARDS.

Tottenham Court-road.—81, Charlotte-st., and 6, Tottenham-mews, f., p. ..... 2,585
Hackney.—Mare-st., f.g. rents 90*l.*, reversion in 68 yrs. ..... 2,100
Fortescue-av., f.g. rents 110*l.*, reversion in 68 yrs. ..... 2,725
Old Ford.—Candy-st., f.g. rents 31*l.* 10s., reversion in 66 yrs. ..... 780
Clapton.—27, 29, and 31, Walsingham-rd., f., y.r. 84*l.* ..... 970
Holloway.—69, Andover-rd. (s.), u.t. 47 yrs., g.r. 7*l.*, w.r. 39*l.* ..... 115
Barnsbury.—23 and 24, Clayton-st., u.t. 36¼ yrs., g.r. 12*l.*, y.r. 60*l.* ..... 330

By J. M. SLY & Co.

Little Wakering, Essex.—Kimberley-rd., freehold cottage, y.r. 15*l.* 12s. ..... 170

By STIMSON & SONS.

Clapham.—42, Osborne-ter., u.t. 30 yrs., g.r. 7*l.* 10s., e.r. 50*l.* ..... 250
Stockwell.—1, Hubert-gr., and 89, Tasman-rd., u.t. 66¼ yrs., g.r. 10*l.* 10s., y. and w.r. 58*l.* 12s. ..... 400
Poplar.—Galbraith-st., f.g. rents 25*l.*, reversion in 73 yrs. ..... 480
Deptford.—31 to 47 (odd), Hosier-st.; 62 and 64, 56 and 58, Addey-st., u.t. 33 and 37¼ yrs., g.r. 30*l.*, w.r. 250*l.* 18s. ..... £1,020
Merton.—69, High-st. (s.), f., y.r. 55*l.* ..... 750
Camberwell.—38 and 40, Waterloo-st., f., y.r. 39*l.* ..... 325
Peckham.—121, Lower Park-rd., f., y.r. 30*l.* .. 425
97 and 99, Fenham-rd., f., w.r. 52*l.* ..... 425
45, Downes-st., f., y.r. 40*l.* ..... 500
16, King Arthur-st. (s.), u.t. 33 yrs., g.r. 2*l.* 3s., y.r. 28*l.* ..... 180
Old Kent-road.—96 and 98, Glengall-rd. (s.), f., w.r. 46*l.* 16s. ..... 180
Camberwell.—37 and 41, Milkwood-rd., u.t. 58 yrs., g.r. 7*l.*, w.r. 74*l.* 2s. ..... 420
63 and 65, Heron-rd., u.t. 48 yrs., g.r. 9*l.*, w.r. 72*l.* 16s. ..... 465
136, Lowden-rd., u.t. 58 yrs., g.r. 5s., w.r. 35*l.* 2s. ..... 200

By GRIMLEY & SON (at Birmingham).

Edgbaston, Warwick.—243 to 246, Monument-rd., f., w.r. 83*l.* 4s. ..... 1,100
1 to 4, Laburnham-pl., 1 and 2, Laurch-pl., f., w.r. 101*l.* 8s. ..... 1,110
12, Moseley-village, f., y.r. 100*l.* ..... 1,150
47, Edgbaston-st., and 23, Pershore-st., f., y.r. 120*l.* ..... 1,410
Irving-st., f.g.r. 20*l.* 18s. 6d., reversion in 49 yrs. ..... 540

ALFRED SPAIN & SON (at Gravesend).

Grays, Essex.—44 and 46, Bedford-rd. (s.), u.t. 75 yrs., g.r. 3*l.* 10s., y.r. 52*l.* ..... 320
Gravesend, Kent.—Arthur-st., f.g. rents 17*l.* 9s., reversion in 43 yrs. ..... 470
Nine Elms-gr., f.g.r. 9*l.* 13s., reversion in 43 yrs. ..... 190
89, Pelham-rd., f., p. ..... 285

May 20.—By W. B. HALLETT.

Hornsey.—7 and 8, Upper Hornsey-rise, f., y. and e.r. 105*l.* ..... 1,045

By MULLETT, BOOKER, & Co.

Maida Hill.—8, Castellian-rd., u.t. 66 yrs., g.r. 10*l.*, e.r. 80*l.* ..... 600

By E. PENNINGTON.

Wandsworth.—Gayville-rd., f.g.r. 13*l.* 10s., reversion in 84 yrs. ..... 224
Thornton Heath.—Osborne-rd., f.g.r. 10*l.*, reversion in 88 yrs. ..... 180
Holborn.—Warwick-ct., l.g.r. 250*l.*, u.t. 68 yrs., g.r. 200*l.* ..... 900

By PRICKETT & ELLIS.

Highgate.—21, West-hill, u.t. 49 yrs., g.r. 10*l.*, y.r. 47*l.* 10s. ..... 275

*Contractions used in these lists.*—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beerhouse; p.h. for public-house; o. for office; s. for shops; ct. for court.

## MEETINGS.

SATURDAY, JUNE 6.

*Edinburgh Architectural Association.*—Visit to "The Glen," Peebles.

MONDAY, JUNE 8.

*Association of Teachers in Technical Institutions (Second Annual Conference).*—Building Section, Marlborough Rooms, Regent-street Polytechnic, W., 6 p.m. Arts and Crafts Section (London Day Training College), 7 p.m.

TUESDAY, JUNE 9.

*Association of Teachers in Technical Institutions (continued).*—A Discussion on Professional Matters (for members only) at St. Bride Institute, opened by Messrs. P. Abbott, B.A. (Regent-street Polytechnic) and F. E. Weston, B.Sc. (Regent-street Polytechnic). 11 a.m. "Trade and Technical Schools."

SATURDAY, JUNE 13.

*Northern Architectural Association.*—Visit to South Shields.

## TO CORRESPONDENTS.

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All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and not to the Editor.

## PRICES CURRENT OF MATERIALS.

**** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

### BRICKS, &c.

| | £ s. d. | |
|---|---|---|
| Best Stocks | 1 8 0 | per 1000 alongside, in river. |
| Picked Stocks for Facings | 2 10 0 | ,, delivered. |
| Flettons | 1 7 0 | ,, at railway depôt. |
| Best Fareham Red | 3 12 0 | ,, ,, ,, |
| Best Red Pressed Ruabon Facing | 5 0 0 | ,, ,, ,, |
| Best Blue Pressed Staffordshire | 3 15 0 | ,, ,, ,, |
| Do. Bullnose | 4 0 0 | ,, ,, ,, |
| Best Stourbridge Fire Bricks | 3 14 0 | ,, ,, ,, |
| GLAZED BRICKS. | | |
| Best White and Ivory Glazed Stretchers | 10 7 6 | ,, ,, ,, |
| Headers | 9 17 6 | ,, ,, ,, |
| Quoins, Bullnose, and Flats | 13 17 6 | ,, ,, ,, |
| Double Stretchers | 15 17 6 | ,, ,, ,, |
| Double Headers | 12 17 6 | ,, ,, ,, |
| One Side and two Ends | 16 17 6 | ,, ,, ,, |
| Two Sides and one End | 17 17 6 | ,, ,, ,, |
| Splays, Chamferred, Squints | 15 10 0 | ,, ,, ,, |
| Best Dipped Salt Glazed Stretchers | 10 7 6 | ,, ,, ,, |
| Headers | 9 17 6 | ,, ,, ,, |
| Quoins, Bullnose, and Flats | 13 17 6 | ,, ,, ,, |
| Double Stretchers | 15 17 6 | |
| Double Headers | 12 17 6 | ,, ,, ,, |
| One Side and two Ends | 16 17 6 | ,, ,, ,, |
| Two Sides and one End | 17 17 6 | ,, ,, ,, |
| Splays, Chamferred, Squints | 15 10 0 | ,, ,, ,, |
| Second Quality White and Dipped Salt Glazed | 1 5 0 | ,, less than best. |
| | s. d. | |
| Thames and Pit Sand | 6 6 | per yard, delivered. |
| Thames Ballast | 5 0 | ,, ,, |
| Best Portland Cement | 28 0 | per ton, ,, |
| Best Ground Blue Lias Lime | 19 0 | ,, ,, |

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11s. 6d. per yard, delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

### STONE.

| | s. d. | |
|---|---|---|
| BATH STONE—delivered on road waggons, Paddington Depôt | 1 6½ | per ft. cube. |
| Do. do. delivered on road waggons, Nine Elms Depôt | 1 8½ | ,, ,, |
| PORTLAND STONE (20 ft. average)— | | |
| Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf | 2 1 | ,, ,, |
| White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf | 2 2½ | ,, ,, |
| | s. d. | |
| Ancaster in blocks | 1 10 | per ft. cube, deld. rly. depôt. |
| Beer ,, | 1 6 | ,, ,, |
| Greenshill ,, | 1 10 | ,, ,, |
| Darley Dale in blocks | 2 4 | ,, ,, |
| Red Corsehill ,, | 2 2 | ,, ,, |
| Closeburn Red Freestone | 2 0 | ,, ,, |
| Red Mansfield ,, | 2 4 | ,, ,, |
| YORK STONE—Robin Hood Quality | s. d. | |
| Scappled random blocks | 2 10 | ,, ,, |
| 6 in. sawn two sides landings to sizes (under 40 ft. super.) | 2 3 | per ft. super. ,, |
| 6 in. rubbed two sides ditto, ditto | 2 6 | ,, ,, |
| 3 in. sawn two sides slabs (random sizes) | 0 11½ | per ft. cube ,, |
| 2 in. to 2½ in. sawn one side slabs (random sizes) | 0 7½ | ,, ,, |
| 1½ in. to 2 in. ditto, ditto | 0 6 | ,, ,, |
| HARD YORK— | | |
| Scappled random blocks | 3 0 | ,, ,, |
| 6 in. sawn two sides landings to sizes (under 40 ft. super.) | 2 8 | per ft. super. ,, |
| 6 in. rubbed two sides ditto | 3 0 | ,, ,, |
| 3 in. sawn two sides slabs (random sizes) | 1 2 | ,, ,, |
| 2 in. self-faced random flags | 0 5 | ,, |

### SLATES

| In. In. | £ s. d | |
|---|---|---|
| 20×10 best blue Bangor | 13 2 6 | per 1000 of 1200 at r.d. |
| 20×12 ,, ,, | 13 17 6 | ,, ,, |
| 20×10 first quality,, | 13 0 0 | ,, ,, |
| 20×12 ,, ,, | 13 15 0 | ,, ,, |
| 16×8 ,, ,, | 7 5 0 | ,, ,, |
| 20×10 best blue Portmadoc | 12 12 6 | ,, ,, |
| 16×8 ,, ,, | 6 12 6 | ,, ,, |
| 20×10 best Eureka unfading green | 15 17 6 | ,, ,, |
| 20×12 ,, ,, ... | 18 7 6 | ,, ,, |
| 18×10 ,, ,, ... | 13 5 0 | ,, ,, |
| 16×8 ,, ,, ... | 10 5 0 | ,, ,, |
| 20×10 permanent green | 11 12 6 | ,, ,, |
| 18×10 ,, ,, | 9 12 6 | ,, ,, |
| 16×8 ,, ,, | 6 12 6 | ,, ,, |

## TILES

| | s. | d. | |
|---|---|---|---|
| Best plain red roofing tiles... | 42 | 0 | per 1000 at rly. depôt. |
| Hip and Valley tiles ... | 3 | 7 | per doz. " |
| Best Broseley tiles ..... | 50 | 0 | per 1000 " |
| Do. Ornamental tiles ..... | 52 | 6 | " " |
| Hip and Valley tiles ... | 4 | 0 | per doz. " |
| Best Ruabon red, brown, or brindled do. (Edwards) ... | 57 | 6 | per 1000 " |
| Do. Ornamental do..... | 60 | 0 | " " |
| Hip tiles ..... | 4 | 0 | per doz. " |
| Valley tiles ..... | 3 | 0 | " " |
| Best Red or Mottled Staffordshire do. (Peakes)..... | 51 | 9 | per 1000 " |
| Do. Ornamental do..... | 54 | 6 | " " |
| Hip tiles ..... | 4 | 1 | per doz. " |
| Valley tiles..... | 3 | 8 | " " |
| Best "Rosemary" brand plain tiles ..... | 48 | 0 | per 1000 " |
| Best Ornamental tiles..... | 50 | 0 | " " |
| Hip tiles ..... | 4 | 0 | per doz. " |
| Valley tiles..... | 3 | 8 | " " |
| Best "Hartshill" brand plain tiles, sand-faced ..... | 50 | 0 | per 1000 " |
| Do. pressed..... | 47 | 6 | " " |
| Do. Ornamental do..... | 50 | 0 | " " |
| Hip tiles ..... | 4 | 0 | per doz. " |
| Valley tiles..... | 3 | 6 | " " |
| Staffordshire (Hanley) Reds or Brindled tiles..... | 42 | 6 | per 1000 " |
| Hand-made sand-faced..... | 45 | 0 | " " |
| Hip tiles ..... | 4 | 0 | per doz. " |
| Valley tiles ..... | 3 | 6 | " " |

## WOOD.

| Building Wood. | At per standard. £ | s. | d. | | £ | s. | d. |
|---|---|---|---|---|---|---|---|
| Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in..... | 13 | 10 | 0 | ... | 15 | 0 | 0 |
| Deals: best 3 by 9 ..... | 13 | 0 | 0 | ... | 14 | 0 | 0 |
| Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in. | 11 | 0 | 0 | ... | 12 | 0 | 0 |
| Battens: best 2½ by 6 and 3 by 6... | 0 | 10 | 0 | less than 7 in. and 8 in. | | | |
| Deals: seconds..... | 1 | 0 | 0 | less than best. | | | |
| Battens: seconds..... | 0 | 10 | 0 | " " | | | |
| 2 in. by 4 in. and 2 in. by 6 in.... | 9 | 0 | 0 | ... | 10 | 0 | 0 |
| 2 in. by 4½ in. and 2 in. by 5 in... | 8 | 10 | 0 | ... | 9 | 10 | 0 |
| Foreign Sawn Boards— in. and 1½ in. by 7 in. ..... | 0 | 10 | 0 | more than battens. | | | |
| ¾ in. ..... | 1 | 0 | 0 | " | | | |
| Fir timber: best middling Danzig or Memel (average specification) | At per load of 50 ft. 4 | 10 | 0 | ... | 5 | 0 | 0 |
| Seconds ..... | 4 | 0 | 0 | ... | 4 | 10 | 0 |
| Small timber (8 in. to 10 in.) ... | 3 | 12 | 6 | ... | 3 | 15 | 0 |
| Small timber (6 in. to 8 in.)..... | 3 | 0 | 0 | ... | 3 | 10 | 0 |
| Swedish balks ..... | 2 | 10 | 0 | ... | 3 | 0 | 0 |
| Pitch-pine timber (30 ft. average) | 4 | 0 | 0 | ... | 4 | 15 | 0 |

| Joiners' Wood. | At per standard. £ | s. | d. | | £ | s. | d. |
|---|---|---|---|---|---|---|---|
| White Sea: first yellow deals, 3 in. by 11 in..... | 24 | 0 | 0 | ... | 25 | 0 | 0 |
| 3 in. by 9 in. ..... | 22 | 0 | 0 | ... | 23 | 0 | 0 |
| Battens, 2½ in. and 3 in. by 7 in. | 16 | 10 | 0 | ... | 18 | 0 | 0 |
| Second yellow deals, 3 in. by 1 in. | 18 | 10 | 0 | ... | 20 | 0 | 0 |
| " " 3 in. by 9 in. | 17 | 10 | 0 | ... | 19 | 0 | 0 |
| Battens, 2½ in. and 3 in. by 7 in. | 13 | 10 | 0 | ... | 14 | 10 | 0 |
| Third yellow deals, 3 in. by 11 in. and 9 in. ..... | 13 | 10 | 0 | ... | 15 | 0 | 0 |
| Battens, 2½ in. and 3 in. by 7 in. | 11 | 0 | 0 | ... | 12 | 0 | 0 |
| Petersburg first yellow deals, 3 in. by 11 in..... | 21 | 0 | 0 | ... | 22 | 10 | 0 |
| Do. 3 in. by 9 in. ..... | 18 | 0 | 0 | ... | 19 | 10 | 0 |
| Battens ..... | 13 | 10 | 0 | ... | 15 | 0 | 0 |
| Second yellow deals, 3 in. by 11 in..... | 16 | 0 | 0 | ... | 17 | 0 | 0 |
| Do. 3 in. by 9 in. ..... | 14 | 10 | 0 | ... | 16 | 0 | 0 |
| Battens ..... | 11 | 0 | 0 | ... | 12 | 10 | 0 |
| Third yellow deals, 3 in. by 11 in. | 13 | 0 | 0 | ... | 14 | 0 | 0 |
| Do. 3 in. by 9 in..... | 12 | 10 | 0 | ... | 14 | 0 | 0 |
| Battens ..... | 10 | 0 | 0 | ... | 11 | 0 | 0 |
| White Sea and Petersburg— First white deals, 3 in. by 11 in. | 14 | 10 | 0 | ... | 15 | 10 | 0 |
| " " 3 in. by 9 in. | 13 | 10 | 0 | ... | 14 | 10 | 0 |
| Battens..... | 11 | 0 | 0 | ... | 12 | 0 | 0 |
| Second white deals, 3 in. by 11 in. | 13 | 10 | 0 | ... | 14 | 10 | 0 |
| " " 3 in. by 9 in. | 12 | 10 | 0 | ... | 13 | 10 | 0 |
| Battens ..... | 10 | 0 | 0 | ... | 11 | 0 | 0 |
| Pitch-pine: deals..... | 18 | 0 | 0 | ... | 21 | 0 | 0 |
| Under 2 in. thick extra ..... | 0 | 10 | 0 | ... | 1 | 0 | 0 |
| Yellow pine—First, regular sizes | 44 | 0 | 0 | upwards. | | | |
| Oddments ..... | 32 | 0 | 0 | " | | | |
| Seconds, regular sizes ..... | 33 | 0 | 0 | " | | | |
| Oddments ..... | 28 | 0 | 0 | " | | | |
| Kauri Pine—Planks, per ft. cube.. | 0 | 3 | 6 | ... | 0 | 5 | 0 |
| Danzig and Stettin Oak Logs— Large, per ft. cube ..... | 0 | 3 | 0 | ... | 0 | 3 | 6 |
| Small " " ..... | 0 | 2 | 6 | ... | 0 | 2 | 9 |
| Wainscot Oak Logs, per ft. cube.. | 0 | 5 | 6 | ... | 0 | 6 | 0 |
| Dry Wainscot Oak, per ft. sup. as inch ..... | 0 | 0 | 8½ | ... | 0 | 0 | 9½ |
| ¾ in. do. do. ..... | 0 | 0 | 7 | ... | | — | |
| Dry Mahogany—Honduras, Tabasco, per ft. super. as inch... | 0 | 0 | 9 | ... | 0 | 1 | 0 |
| Selected, Figury, per ft. super. as inch ..... | 0 | 1 | 6 | ... | 0 | 2 | 6 |
| Dry Walnut, American, per ft. super. as inch ..... | 0 | 0 | 10 | ... | 0 | 1 | 0 |
| Teak, per load ..... | 17 | 0 | 0 | ... | 22 | 0 | 0 |
| American Whitewood Planks, per ft. cube..... | 0 | 4 | 0 | ... | 0 | 5 | 0 |

| Prepared Flooring, etc.— | Per square. £ | s. | d. | | £ | s. | d. |
|---|---|---|---|---|---|---|---|
| 1 in. by 7 in. yellow, planed and shot ..... | 0 | 13 | 6 | ... | 0 | 17 | 0 |
| 1 in. by 7 in. yellow, planed and matched ..... | 0 | 14 | 0 | ... | 0 | 18 | 0 |
| 1¼ in. by 7 in. yellow, planed and matched ..... | 0 | 16 | 0 | ... | 1 | 0 | 0 |
| 1 in. by 7 in. white, planed and shot ..... | 0 | 12 | 0 | ... | 0 | 14 | 6 |
| 1 in. by 7 in. white, planed and matched ..... | 0 | 12 | 6 | ... | 0 | 15 | 0 |
| 1¼ in. by 7 in. white, planed and matched ..... | 0 | 15 | 0 | ... | 0 | 16 | 6 |
| ¾ in. by 7 in. yellow, matched and beaded or V-jointed brds. | 0 | 11 | 0 | ... | 0 | 13 | 6 |
| 1 in. by 7 in. " " | 0 | 14 | 0 | ... | 0 | 18 | 0 |
| ¾ in. by 7 in. white " " | 0 | 10 | 0 | ... | 0 | 11 | 6 |
| 1 in. by 7 in. " " | 0 | 12 | 9 | ... | 0 | 15 | 0 |

6 in. at 6d. to 9d. per square less than 7 in.

## JOISTS, GIRDERS, &c.

| | In London, or delivered Railway Vans, per ton. £ | s. | d. | | £ | s. | d. |
|---|---|---|---|---|---|---|---|
| Rolled Steel Joists, ordinary sections ..... | 7 | 0 | 0 | ... | 7 | 10 | 0 |
| Compound Girders, ordinary sections ..... | 9 | 0 | 0 | ... | 10 | 0 | 0 |
| Steel Compound Stanchions ..... | 11 | 0 | 0 | ... | 12 | 0 | 0 |
| Angles, Tees, and Channels, ordinary sections ..... | 9 | 0 | 0 | ... | 10 | 0 | 0 |
| Flitch Plates ..... | 9 | 0 | 0 | ... | 9 | 10 | 0 |
| Cast Iron Columns and Stanchions including ordinary patterns..... | 7 | 10 | 0 | ... | 8 | 10 | 0 |

## METALS.

| | Per ton, in London. £ | s. | d. | | £ | s. | d. |
|---|---|---|---|---|---|---|---|
| Iron— | | | | | | | |
| Common Bars ..... | 8 | 10 | 0 | ... | 9 | 0 | 0 |
| Staffordshire Crown Bars, good merchant quality ..... | 8 | 15 | 0 | ... | 9 | 5 | 0 |
| Staffordshire "Marked Bars" ... | 10 | 10 | 0 | ... | — | | |
| Mild Steel Bars ..... | 8 | 15 | 0 | ... | 9 | 5 | 0 |
| Hoop Iron, basis price ..... | 9 | 5 | 0 | ... | 9 | 10 | 0 |
| " " Galvanised ..... | 17 | 0 | 0 | ... | — | | |
| (*And upwards, according to size and gauge.) | | | | | | | |
| Sheet Iron Black— | | | | | | | |
| Ordinary sizes to 20 g. ..... | 9 | 15 | 0 | ... | — | | |
| " " 24 g. ..... | 10 | 15 | 0 | ... | — | | |
| " " 26 g. ..... | 12 | 5 | 0 | ... | — | | |
| Sheet Iron, Galvanised, flat, ordinary quality— | | | | | | | |
| Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g..... | 15 | 0 | 0 | ... | — | | |
| Ordinary sizes to 22 g. and 24 g. | 15 | 10 | 0 | ... | — | | |
| " " 26 g. ..... | 16 | 10 | 0 | ... | — | | |
| Sheet Iron, Galvanised, flat, best quality— | | | | | | | |
| Ordinary sizes to 20 g. ..... | 18 | 0 | 0 | ... | — | | |
| " " 22 g. and 24 g. | 18 | 10 | 0 | ... | — | | |
| " " 26 g. ..... | 20 | 0 | 0 | ... | — | | |
| Galvanised Corrugated Sheets— | | | | | | | |
| Ordinary sizes, 6 ft. to 8 ft. 20 g. | 14 | 10 | 0 | ... | — | | |
| " " 22 g. and 24 g. | 14 | 15 | 0 | ... | — | | |
| " " 26 g. ..... | 16 | 5 | 0 | ... | — | | |
| Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker ..... | 12 | 0 | 0 | ... | — | | |
| Best Soft Steel Sheets, 22 g. & 24 g. | 13 | 0 | 0 | ... | — | | |
| " " " 26 g. ..... | 15 | 0 | 0 | ... | — | | |
| Cut Nails, 3 in. to 6 in. ..... ..... | 10 | 10 | 0 | ... | 11 | 0 | 0 |
| (Under 3 in., usual trade extras.) | | | | | | | |

| Lead, &c. | Per ton, in London £ | s. | d. | | £ | s. | d. |
|---|---|---|---|---|---|---|---|
| Lead—Sheet, English, 3lb. and up. | 16 | 5 | 0 | ... | — | | |
| Pipe in coils ..... | 16 | 15 | 0 | ... | — | | |
| Soil pipe ..... | 19 | 5 | 0 | ... | — | | |
| Compo pipe..... | 20 | 5 | 0 | ... | — | | |
| Zinc—Sheet— | | | | | | | |
| Vieille Montagne .....ton | 27 | 10 | 0 | ... | — | | |
| Silesian..... | 27 | 5 | 0 | ... | — | | |
| Copper— | | | | | | | |
| Strong Sheet.....per lb. | 0 | 1 | 0 | ... | — | | |
| Thin " ..... " | 0 | 1 | 1 | ... | — | | |
| Copper nails ..... " | 0 | 0 | 10 | ... | — | | |
| Copper wire ..... " | 0 | 0 | 10 | ... | — | | |
| Brass— | | | | | | | |
| Strong Sheet..... " | 0 | 0 | 11 | ... | — | | |
| Thin..... " | 0 | 1 | 0 | ... | — | | |
| Tin—English Ingots..... " | 0 | 1 | 5 | ... | — | | |
| Solder—Plumbers' ..... " | 0 | 0 | 7½ | ... | — | | |
| Tinmen's ..... " | 0 | 0 | 10 | ... | — | | |
| Blowpipe ..... " | 0 | 1 | 0 | ... | — | | |

## ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

| | |
|---|---|
| 15 oz. thirds..... | 2½d. per ft. delivered. |
| " fourths..... | 1¼d. " " |
| 21 oz. thirds ..... | 3d. " " |
| " fourths..... | 2½d. " " |
| 26 oz. thirds ..... | 4d. " " |
| " fourths ..... | 3d. " " |
| 32 oz. thirds ..... | 4½d. " " |
| " fourths..... | 4¼d. " " |
| Fluted Sheet, 15 oz..... | 3½d. " " |
| " 21 oz. ..... | 4½d. " " |

## ENGLISH BOLLED PLATE IN CRATES OF STOCK SIZES.

| | |
|---|---|
| ⅛ Hartley's ..... | 2½d. per ft. delivered. |
| ¼ " ..... | 2½d. " " |
| ⅜ " ..... | 2½d. " " |
| Figured, Oxford Bolled, and "Oceanic" Glass, white ..... | 3½d. " " |
| " tinted ... | 5½d. " " |
| "Other Glass— | |
| "Arctic" Glass, white ..... | 4d. " " |
| " " tinted..... | 5½d. " " |
| " " ruby and opalescents | 1s. " " |

| Oils, &c. | | £ | s. | d. |
|---|---|---|---|---|
| Raw Linseed Oil in pipes ..... | per gallon | 0 | 1 | 11 |
| " " in barrels ..... | " | 0 | 2 | 0 |
| " " in drums ..... | " | 0 | 2 | 2 |
| Boiled " in pipes ..... | " | 0 | 2 | 1 |
| " " in barrels ..... | " | 0 | 2 | 2 |
| " " in drums ..... | " | 0 | 2 | 4 |
| Turpentine in barrels ..... | " | 0 | 2 | 10 |
| " in drums ..... | " | 0 | 3 | 1 |
| Genuine Ground English White Lea | per ton | 22 | 0 | 0 |
| Red Lead, Dry ..... | " | 21 | 0 | 0 |
| Best Linseed Oil Putty ..... | per cwt. | 0 | 7 | 0 |
| Stockholm Tar ..... | per barrel | 1 | 12 | 0 |

| Varnishes, &c. | Per gallon. £ | s. | d. |
|---|---|---|---|
| Fine Pale Oak Varnish ..... | 0 | 8 | 0 |
| Pale Copal Oak..... | 0 | 10 | 6 |
| Superfine Pale Elastic Oak ..... | 0 | 12 | 6 |
| Fine Extra Hard Church Oak..... | 0 | 10 | 0 |
| Superfine Hard-drying Oak, for seats of Churches..... | 0 | 14 | 6 |
| Fine Elastic Carriage ..... | 0 | 12 | 0 |
| Superfine Pale Elastic Carriage ..... | 0 | 16 | 0 |
| Fine Pale Maple ..... | 0 | 16 | 0 |
| Finest Pale Durable Copal ..... | 0 | 18 | 0 |
| Extra Pale French Oil ..... | 1 | 1 | 0 |
| Eggshell Flatting Varnish ..... | 0 | 18 | 0 |
| White Copal Enamel..... | 1 | 4 | 0 |
| Extra Pale Paper ..... | 0 | 12 | 0 |
| Best Japan Gold Size..... | 0 | 10 | 6 |
| Best Black Japan ..... | 0 | 16 | 0 |
| Oak and Mahogany Stain..... | 0 | | 0 |
| Brunswick Black ..... | 0 | | 0 |
| Berlin Black ..... | 0 | | 0 |
| Knotting ..... | 0 | 10 | 9 |
| French and Brush Polish..... | 0 | 10 | 9 |

## TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the rate of 28s. per annum, and Canada 21s. 6d. (52 numbers) PREPAID. To all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

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## TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursday*. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcement of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* Denotes *accepted*. † Denotes *provisionally accepted*.

**ABERDEEN.**—For macadamising and laying granite kerb and channel at Church-street, for the Town Council. Mr. W. Dyack, Burgh Surveyor, Town House, Aberdeen:—

J. McAdam & Sons, Charlotte-street, Aberdeen ..... £146 3 2

**ABERTRIDWR.**—For street works, Thomas-street, for the Caerphilly Urban District Council. Mr. A. O. Harpur, Surveyor, Council Offices, Caerphilly:—

| | | | |
|---|---|---|---|
| J. Lewis .... | £1,349 1 0 | T. Williams & Co. ..... | £1,204 10 1 |
| Williams & James .... | 1,262 18 7 | A. G. Collins & Co., Cadoxton, Barry* | 1,189 5 5 |
| G. Rutter .... | 1,287 2 6 | | |
| J. Williams .. | 1,231 11 0 | | |

**ALSTON.**—For erecting a stone skew bridge across the Blackburn, for the Cumberland County Council. Mr. G. J. Bell, County Surveyor and Bridge Master, The Courts, Carlisle:—

Wilson & Bow..... £1,041
T. Lant, 11, Roseworth-avenue, Gosforth, Newcastle-on-Tyne* ..... 824
[County Surveyor's estimate, £830.]

**ANNFIELD PLAIN** (Durham).—For building two houses and business premises, for Mr. T. S. Parker:—

G. Watson & Sons, Stockfield-on-Tyne.. £1,571

**BARNET.**—For making up Falkland-road, for the Urban District Council. Mr. W. F. Wilkins, Surveyor, 40, High-street, Barnet:—

| | | | |
|---|---|---|---|
| O. T. Gibbons ..... | £653 | T. Adams, Wood Green† ..... | £621 |
| G. Mann ..... | 630 | | |
| Mowlem & Co. ..... | 625 | | |

**BISHOP MONKTON.**—For sewerage works, for Ripon Rural District Council. Mr. H. A. Johnson, M.Inst.C.E., 15, Exchange, Bradford:—

Barker Bros., Dudley Hill, Bradford*.. £1,832 15 3

**BRENTFORD.**—For extension of the Ealing-road Council Schools, for the Middlesex County Council. Mr. H. G. Crothall, Architect to the Education Committee:—

| | | | |
|---|---|---|---|
| Treasure & Son.... | £1,753 | W. J. Renshaw.... | £1,493 |
| F. G. Minter ..... | 1,726 | Dorey & Co., Ltd... | 1,493 |
| W. Lacey ..... | 1,630 | W. J. Dickens .... | 1,490 |
| Knight & Son .... | 1,583 | J. Barker & Co.‡ .. | 1,427 |
| T. J. Hawkins & Co. | 1,517 | | |

‡ Recommended for acceptance.

**BRIXHAM.**—For 1,000 yds. of 3-in. c.i. water main at Heath-road, for the Urban District Council. Mr. J. Silley, Surveyor, Town Hall, Brixham. Quantities by Surveyor:—

| | | | |
|---|---|---|---|
| E. Foxworthy | £526 7 6 | H. R. Coles.... | £329 17 8 |
| T. Shaddock .. | 433 9 0 | P. Hayman .... | 290 0 0 |
| J. Shaddock .. | 397 15 6 | G. Cranson & Co., Westminster† | 289 10 0 |
| N. M. Dunstone | 337 11 11 | | |

**BRUNDALL.**—For residence at Brundall, Norfolk, for Dr. McKelvie. Plans and quantities prepared by Messrs. Morgan & Buckingham, architects and surveyors, 1, Upper King-street, Norwich:—

| | | | |
|---|---|---|---|
| J. Youngs & Sons .. | £1,428 | H. J. Hannant .... | £1,343 |
| G. E. Hawes & Son. | 1,397 | T. Gill & Son* .... | 1,287 |
| Scarles Bros. ..... | 1,378 | | |

[All of Norwich.]

**CANTON** (Cardiff).—For erecting a block of three houses in Clive-road, Canton, for Mr. W. R. Davies. Mr. W. H. Dashwood Caple, F.R.I.B.A., 2, Church-street, Cardiff:—

| | | | |
|---|---|---|---|
| Cox & Bardo.. | £1,607 0 0 | Maggs & Co. .. | £1,326 5 0 |
| J. Gibson .... | 1,497 0 0 | J. Blight .... | 1,315 8 0 |
| Melbuish Bros. | 1,475 0 0 | D. Davies, Roath, Cardiff*..... | 1,310 0 0 |
| J. Allan, Ltd... | 1,420 0 0 | | |
| W. H. Evans .. | 1,395 0 0 | | |

**CARDIFF.**—For structural alterations and additions to Canton Furnishing Stores, 163, Cowbridge-road, for Mr. Harry Cohen. Mr. Samuel R. Baker, building surveyor, Romilly-crescent, Cardiff:—

J. H. Maggs & Co., Cardiff ..... £240 5 6

**CARLISLE.**—For Belle Vue and Stainton sewerage scheme, for the Rural District Council. Mr. J. Graham, engineer, Bank-street, Carlisle:—

M. Green, Belfast ..... £1,819 2 9

**CHAPEL-EN-LE-FRITH.**—For pulling down old building and erecting cart-shed, etc., at sewage-works, Bridgeholme Green, Chinley, for the Rural District Council. Mr. Joseph Goddard, Building Surveyor, Chinley:—

S. Hamer, Chinley *and* Stockport* ..... £52

**CHATHAM.**—For erecting public sanitary convenience and weighbridge office at the Paddock, Military-road, for the Town Council. Mr. C. Day, Borough Surveyor, Town Hall, Chatham:—

| | | | |
|---|---|---|---|
| A. G. Webb ..... | £1,230 | West Bros., Strood, Rochester*..... | £1,069 |
| H. E. Phillips .... | 1,125 | | |

**CHESTER.**—For the construction of underground conveniences (*a*) in Northgate-street, (*b*) at junction of Bridge-street and Grosvenor-road. Mr. W. Matthews Jones, City Surveyor and Engineer, Chester. Quantities by Surveyor :—

*Northgate-street.*

M. Browne, Cow-lane Bridge, Chester* .. £1,449

*Junction of Bridge-street and Grosvenor-road.*

M. Browne, Cow-lane Bridge, Chester* .. £761

**CWMBRAN.**—For private street works, Oak-street, for Llantarnam Urban District Council. Mr. W. Hughes, Surveyor, Great Western House, Cwmbran :—

| | | | |
|---|---|---|---|
| Truscott & Denning | £588 4 1½ | H. Williams | £360 0 0 |
| H. Davies | 485 0 0 | J. Monks | 358 15 4 |
| A. C. Sheppard | 399 10 6 | R. McNab, Newport* | 349 16 5 |
| Poulton & Whiting | 383 0 0 | | |

**EALING.**—For proposed new Welsh Mission Hall, for the Committee of Welsh Chapel. Mr. T. J. Evans, architect, Fulham :—

| | | | |
|---|---|---|---|
| Lyne & Sons | £1,356 | J. W. Falkner & Son | £1,115 |
| Myring & Son | 1,298 | J. Reece & Co. | 1,053 |
| Swan Bros. | 1,275 | Kingcerle & Son | 1,037 |
| W. Deacon | 1,190 | | |

**EAST HAM.**—For erecting school buildings, Altmore-avenue, for the Education Committee. Mr. R. L. Curtis, architect, 11 and 12, Finsbury-square, E.C. :—

| | | | |
|---|---|---|---|
| C. Wall, Ltd. | £20,021 | Patman & Fotheringham | £19,045 |
| Spencer, Santo, & Co., Ltd. | 19,997 | T. E. Wallis | 18,587 |
| J. & C. Bowyer, Ltd. | 19,776 | J. N. Jerram | 18,678 |
| W. Pattinson & Sons, Ltd. | 19,541 | B. E. Nightingale | 18,181 |
| E. Lawrence & Sons | 19,524 | W. J. Maddison | 17.744 |
| W. Johnson & Co., Ltd. | 19,473 | H. J. Carter | 17,270 |
| | | A. E. Symes, Carpenters-road, Stratford* | 16,941 |

**EXETER.**—For new gymnasium, workshop, and additions to main building at the Devon and Exeter Boys' Reformatory. Messrs. R. H. Harbottle & Son, architects, County Chambers, Exeter :—

| | | | |
|---|---|---|---|
| Lapthorn & Co. | £1,200 0 | Westcott, Austin, & White | £899 0 |
| Luscombe & Son | 1,155 0 | Nicks Bros., Bradninch* | 876 12 |
| J. Tremlett | 995 0 | | |
| Stephens & Son | 900 0 | | |

**GILLINGHAM (Dorset).**—For erecting shops, dwelling-house, etc., for Messrs. William Slade & Sons. Mr. W. J. Marmaduke Morrish, architect (Messrs. Hudson & Martin, Gillingham) :—

| | | | |
|---|---|---|---|
| S. C. Stevens | £3,286 14 0 | Guppy & Son | £2,500 0 0 |
| Hayward & Son | 2,897 11 6 | Sweetman Bros., Wincanton* | 2,444 0 0 |
| Bird & Peppard | 2,735 0 0 | | |
| Harris Bros. | 2,685 0 0 | | |
| S. Curtis | 2,600 0 0 | | |

**GRANGEMOUTH (Scotland).**—For erecting a new supplementary and higher-grade public school, for the Parish School Board. Messrs. Wilson & Tait, architects, B.L. Bank-buildings, Grangemouth :—

| | |
|---|---|
| *Digger, Mason, and Brickwork :* G. Primrose, Grangemouth | £2,728 9 4 |
| *Carpenter and Joiner :* A. Williamson & Son, Grangemouth | 1,207 2 8 |
| *Plumber and Gasfitting :* A. Taylor & Son, Grangemouth | 390 12 0 |
| *Plaster and Cement :* D. McNair, Falkirk | 598 4 7 |
| *Slater :* J. Stewart, Falkirk | 161 6 9 |
| *Iron and Steel :* Redpath, Brown, & Co., Glasgow | 367 8 0 |
| *Smith :* J. Gardner & Sons, Airdrie | 112 18 7 |
| *Drainage :* R. McMillan, Grangemouth | 48 11 1 |
| *Glazier :* W. Meikle & Sons, Glasgow | 285 0 0 |
| *Tiler :* Allan & Sons, Edinburgh | 55 0 0 |

**GREENWICH.**—For paving the roadway and footways of Liskeard-gardens, for the Borough Council :—

| | | | |
|---|---|---|---|
| J. E. Etheridge | £931 0 0 | J. Mowlem & Co., Ltd., Grosvenor Wharf, Westminster* | £808 0 0 |
| H. Woodham & Sons | 888 0 0 | | |
| Fry Bros. | 847 0 0 | | |

**HAMMERSMITH.**—For making-up and paving Shinfield-street, for the Borough Council. Mr. H. Mair, Borough Surveyor, Town Hall, Broadway, Hammersmith :—

| | Indinated Stone. | Akas Stone. |
|---|---|---|
| E. Rogers & Co. | £415 .... | — |
| J. & W. Drake | 397 .... | — |
| H. Morecroft | 371 .... | — |
| J. Mowlem & Co. | 369 .... | — |
| E. Parry & Co. | 366 .... | £375 |
| W. E. Rhodes | 365 .... | — |
| H. J. Greenham | 355 .... | — |
| Wimpey & Co., The Grove, Hammersmith, W.* | 354 .... | — |

**HARMONDSWORTH.**—For alterations to the Council School for Infants, for the Middlesex County Council. Mr. H. G. Crothall, Architect to the Education Committee :—

| | | | |
|---|---|---|---|
| Francis & Co., Ltd. | £697 0 | A. & B. Hanson | £521 0 |
| T. J. Hawkins & Co. | 687 0 | Try & Hancock | 498 16 |
| A. Jordan | 568 0 | S. Bateman‡ | 416 10 |

‡ Recommended for acceptance.

**HENDON.**—For the erection of a new school at the Hyde, for Hendon Education Committee. Mr. W. G. Wilson, architect, Bloomsbury-mansions, Hart-street, W. :—

| | | | |
|---|---|---|---|
| J. Cracknell | £16,272 | F. G. Minter | £14,553 |
| J. Jarvis & Son | 16,270 | Wood & Co. | 14,200 |
| W. Tout | 16,056 | A. Monk | 14,200 |
| W. Pattison & Son | 15,998 | Appleby & Son | 13,900 |
| Patman & Fotheringham | 15,693 | Gough & Co. | 13,994 |
| Spencer, Santo, & Co. | 15,538 | L. F. Lamplough | 13,860 |
| J. & C. Bower, Ltd. | 15,245 | W. J. Fryer & Co. | 13,650 |
| Kirk & Randall | 15,222 | A. E. Nightingale | 13,593 |
| Mattock Bros. | 14,896 | Treasure & Son | 13,433 |
| J. & M. Patrick | 14,846 | W. J. Maddison, Clarkson-street, Canning Town* | 13,297 |

[The total amount of the accepted tender is £13,931, this including an "extra" of £634 for the provision of Buckley glazed bricks for the dadoes.]

**HENDON.**—For making up three new roads, for the Rural District Council. Mr. J. A. Webb, Engineer and Surveyor :—

J. Mowlem & Co., Grosvenor-road, Westminster, S.W.* ..... £4,621

**HOOE (Sussex).**—For the erection of a small farmhouse, for Messrs. A. & J. Snodgrass. Mr. A. Howard Burtenshaw, architect, 7, Bolton-road, Eastbourne :—

| | | | |
|---|---|---|---|
| J. Bodle | £500 0 0 | F. Morris | £386 10 0 |
| L. C. Stevens | 475 0 0 | T. Rich, Hailsham* | 323 10 6 |
| A. Chitton | 469 0 0 | | |
| Taylor Bros. | 419 0 0 | | |

**HULL.**—For constructing a new street between Durham-street and Mersey-street, for the Corporation. Mr. A. E. White, City Engineer, Town Hall, Hull :—

G. Boyce, Holland-street, Hull* ..... £288 4 1

**HULL.**—For the construction of main sewers at Marfleet, for the Corporation. Mr. A. E. White, City Engineer, Town Hall, Hull :—

J. Sangwin, Northumberland-avenue, Hull* ..... £16,003 17 7

**ISLINGTON.**—For new water supply to the main building of the Cornwallis-road workhouse, Cornwallis-road, Holloway, for the Guardians of the Poor of the Borough of St. Mary, Islington. Mr. William Smith, A.R.I.B.A., architect, 15, Mercers-road, Holloway, N. :—

| | | | |
|---|---|---|---|
| Shelby | £321 0 0 | Calnan & Son | £184 0 0 |
| Carson & Whittingham | 251 19 0 | Sprosson & Babb | 162 0 0 |
| Steven & Sons | 248 0 0 | Harding & Son | 152 10 0 |
| J. & F. May | 244 0 0 | Beattie | 145 10 0 |
| Johnson | 196 0 0 | T. Smith & Co., Wembley* | 143 10 0 |
| Reekie & Sons | 189 0 0 | | |
| Nightingale | 187 0 0 | | |

**KIDDERMINSTER.**—For alterations to old chapel at the cemetery, for the Joint Burial Committee. Mr. Andrew James, Borough Surveyor, Kidderminster :—

| | | | |
|---|---|---|---|
| C. Williamson & Co. | £125 0 0 | C. Walker | £90 0 0 |
| R. Thompson | 107 10 0 | J. C. Gudgeon | 87 17 6 |
| E. Harris | 99 10 0 | W. Waters | 84 12 6 |
| | | W. J. Brown | 82 10 0 |

[All of Kidderminster.]

**LEYTON.**—For plant for Urban District Council's generating station. Mr. F. Harman Lewis, electrical engineer :—

*Dynamo.*

British Westinghouse Company ..... £672 0 0
Lancashire Dynamo and Traction Company, 28, Victoria-street, S.W.* 650 0 0

*Mechanical Stoker.*

Underfeed Stoker Company, Ltd., Coventry House, South-place, E.C... £434 0 0

**LEYTON.**—For the supply and maintenance of telephonic communications and electric call bells to firemen's residences (twenty-three bells and four telephone circuits). Mr. F. Harman Lewis, electrical engineer :—

| | Per annum. |
|---|---|
| National Telephone Company | £54 10 0 |
| Stuart & Moore, Victoria House Ealing, W.*‡ | 43 10 0 |
| Headland & Headland§ | 11 0 0 |
| Headland & Headland‖ (alternative) | 18 0 0 |

‡ For seven years. § Plus £220 15 for installation. ‖ For existing system.

**LIVERPOOL.**—For the enlargement of the Southern District Post-office, for the Commissioners of H.M. Works and Public Buildings :—

| | | Credit. |
|---|---|---|
| Rimmer Bros. | £4,107 | £60 |
| S. Webster | 4,100 | 21 |
| W. Thornton & Sons | 4,050 | 35 |
| J. Henshaw & Sons | 4,000 | 25 |
| G. L. Descer | 3,984 | 30 |
| Morrison & Sons | 3,935 | 47 |
| J. Paterson & Son | 3,935 | 90 |
| I. Dilworth | 3,900 | 40 |
| W. Pattinson & Sons, Ltd. | 3,863 | — |
| Hall & Jamieson | 3,789 | 30 |
| Brown & Backhouse | 3,664 | 36 |
| H. Kelly & Bro. | 3,623 | 57 |
| W. Hall & Son, Ltd.* | 3,270 | 25 |

**LONDON.**—For creosoted deal paving, for Lambeth Borough Council. Mr. H. C. J. Edwards, Borough Engineer and Surveyor :—

*Coldharbour-lane (estimated area 14,000 super. yds.).*

Improved Wood Pavement Co., Ltd., 46, Queen Victoria-street, E.C.,* at 7s. 1d. per yard super.

*Kennington-road (estimated area 5,000 super. yds.).*

J. Mowlem & Co., Ltd., Grosvenor-road, S.W.,* at 6s. 9d. per yard super.

**LONDON.**—Laying wood paving in place of existing macadam in Harrington-road, for the Kensington Borough Council :—

| | Per super. yd. s. d. |
|---|---|
| P. Smith | 12 3 |
| W. Mulrhead & Co. | 11 5½ |
| G. Wimbey & Co. | 10 10 |
| W. Griffiths & Co., Ltd. | 10 3 |
| J. Mowlem & Co., Ltd. | 9 9 |
| Acme Flooring and Paving Co. (1904), Ltd. | 9 8 |
| Improved Wood Pavement Co., Ltd.* | 9 7½ |

**LONDON.**—Renewing wood pavement in Fulham-road, etc., for Kensington Borough Council :—

| — | Fulham-road (portion of). | Church-street (portion of). | Pembridge-road (portion of). |
|---|---|---|---|
| | Per sup. yd. s. d. | Per sup. yd. s. d. | Per sup. yd. s. d. |
| W. Muirhead & Co. | 8 4½ | 8 7½ | 8 7½ |
| P. Smith | 7 6 | 7 6½ | 7 7 |
| J. Mowlem & Co., Ltd. | 7 5 | 7 8 | 7 8 |
| Acme Flooring and Paving Co. (1904), Ltd. | 7 5 | 7 6 | 7 6 |
| G. Wimpey & Co. | 7 3 | 7 4 | 7 4 |
| W. Griffiths & Co., Ltd. | 7 3 | 7 3 | 7 3 |
| Improved Wood Pavement Co., Ltd.* | 7 0 | 7 1 | 7 2 |

**LONDON.**—For buildings at North Lambeth Library. Mr. H. C. J. Edwards, Borough Engineer and Surveyor, of Lambeth :—

Hall, Beddall, & Co., Waterloo-bridge, S.E.* .. £1,520

**LONDON.**—For plant extension at Bermondsey generating station. Mr. W. E. J. Heenan, Borough Electrical Engineer :—

*Boiler.*

Babcock & Wilcox, Ltd., Oriel House, Farringdon-street, E.C.* ..... £2,025 0 0

*Steam Dynamo.*

Siemens Bros., Ltd., 1, Abchurch-yard, E.C.* ..... 4,828 0 0

*Condenser and Coaling Tower.*

Deane & Beal, 676, Old Kent-road, S.E.* ..... 3,374 0 0

**LONDON.**—For laundry engine, for Fulham Borough Council. Mr. Francis Wood, Borough Surveyor :—

J. J. Lane, Ltd., Cranbrook-street, Old Ford-road, E.* ..... £110 8 6

**LONDON.**—For doing certain cleaning, painting, papering, etc., to the lower ground and ground floors of the wards and other buildings, Islington Infirmary, Highgate-hill, N., for the Guardians of the Poor of the Borough of St. Mary, Islington. Mr. William Smith, A.R.I.B.A., architect, 15, Mercers-road, Holloway :—

| | | | |
|---|---|---|---|
| Sprosson & Babbs | £1,020 | Harding & Son | £765 |
| Cheetham | 947 | Johnson | 693 |
| Steven & Sons | 944 | Nightingale* | 639 |
| Calnan & Son | 898 | | |

**LONDON.**—For supply of induced draught plant to boilers at Southwark generating station. Mr. D. M. Kinghorn, Borough Electrical Engineer :—

| | |
|---|---|
| J. Howden & Co. | £672 0 0 |
| Electrical Ordnance Accessories Co. | 485 0 0 |
| Sturtevant Engineering Co. | 470 0 0 |
| J. Crawford | 467 10 0 |
| Crompton & Co. | 455 10 0 |
| Bumsted & Chader | 456 0 0 |
| Mather & Platt | 455 0 0 |
| Lancs. Dynamo and Motor Co., Ltd. | 443 15 0 |
| Heenan & Froude | 419 0 0 |
| Siemens Bros. & Co., Ltd. | 417 0 0 |
| Baxter & Chaunter | 405 10 0 |
| Musgrave & Co. | 404 15 0 |
| Puley & Austin | 397 0 0 |
| Davidson & Co. | 395 0 0 |
| Mather & Yates | 374 10 0 |
| Buffalo Forge Co. | 347 10 0 |
| General Electric Co. | 344 10 0 |
| Electrical Construction Co., Wolverhampton* | 330 0 0 |

**LYDNEY.**—For erecting an infants' school, for Gloucestershire Education Committee. Mr. H. Medland, County Architect, 15, Clarence-street. Quantities by Mr. E. A. Pryer, 15, Clarence-street, Gloucester :—

| | | | |
|---|---|---|---|
| W. Jones | £1,435 0 0 | G. Dimery & Sons | £1,306 19 2 |
| W. Bowers & Co. | 1,392 0 0 | J. Gurney | 1,194 0 0 |
| J. Byard & Son | 1,331 0 0 | J. Simmonds, Gloucester* | 1,185 19 11 |

**MANCHESTER.**—For erecting the superstructure of of new sorting-office at Newton-street, for the Commissioners of H.M. Works and Public Buildings :—

| | |
|---|---|
| Purdie & Thompson | £21,768 8 0 |
| J. Howe & Co. | 18,450 0 0 |
| Liverpool Hennebique Co. | 18,400 0 0 |
| Holrough & Co. | 17,912 10 1 |
| Yorkshire Hennebique Co. | 17,254 15 6 |
| H. Lovatt, Ltd | 16,644 10 2 |
| S. F. Davidson | 15,969 0 0 |
| E. Nuttall & Co.* | 13,397 18 6 |

**MASHAM.**—For widening, etc., of Masham Great bridge, for the North Riding of Yorkshire County Council. Mr. W. G. Bryning, County Surveyor, County Hall, Northallerton :—

| | | | |
|---|---|---|---|
| W. Rodney | £3,695 15 7 | T. Lant | £1,813 4 10 |
| R. Wilson | 3,099 0 0 | G. R. Wade | 1,780 2 4 |
| J. Pearson | 2,770 0 0 | G. Dougill & Sons, Aysgarth, S.O. | 1,560 0 0 |
| Whitaker Bros., Ltd. | 2,350 0 0 | | |
| Cleveland Bridge & Engineering Co., Ltd. | 2,214 0 0 | | |

**NEW LEAKE.**—For constructing new footpath, for the Rural District Council of Spilsby. Mr. T. A. Busbridge, C.E., District Highway Surveyor, Spilsby :—

| — | Kerb Price per yd. | Channel. Price per yd. | Gullies. Each. | Grates. Each. | Pipes. Price per yd. |
|---|---|---|---|---|---|
| | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| W. Walker, Spilsby* | 0 1 10 | 0 2 3½ | 1 5 0 | 0 18 0 | 0 1 8 |
| C. R. Seymour | 0 1 9 | 0 2 9 | 0 15 0 | 1 2 6 | 0 2 9 |
| C. Carmen | 0 2 4 | 0 3 0 | 0 17 0 | 1 16 0 | 0 2 6 |
| Chapman & Ellis | 0 2 0 | 0 2 7 | 1 5 0 | 1 5 0 | 0 1 9 |
| J. Dean | 0 1 5½ | 0 2 8½ | 0 15 0 | 1 8 6 | 0 2 6 |

MERTHYR TYDFIL.—For 40 tons of c.i. pipes and specials, for the Town Council. Mr. T. F. Harvey, Borough Engineer :—
Jordans, Ltd., Newport .. Schedule of prices.

MOULTON.—For alterations to branch, for Winsford Industrial Co-operative Society, Ltd. Mr. Thomas Dutton, architect, Dingle-lane, Winsford :—

| | | | |
|---|---|---|---|
| E. W. Bostock.... | £225 0 | Sergeant Bros., Wharton-road, Winsford* ..... | £200 0 |
| J. Fowles & Sons.. | 215 0 | | |
| Birchall Bros..... | 213 0 | | |
| T. Astles ..... | 209 14 | | |

OLD WINDSOR.—For making up Albany-road, for the Rural District Council. Mr. W. Menzies, F.S.I., Surveyor to Council :—

| | | | |
|---|---|---|---|
| J. Mowlem & Co., Ltd. ..... | £549 0 0 | S. Gibbons .... | £537 19 9 |
| J. Elliott & T. Gosling..... | 540 0 0 | Wheeler & Co.. | 497 0 0 |
| | | T. Free & Sons, Maidenhead* | 459 9 9 |

PORTSMOUTH.—For the extension of ferro-concrete silos (Hennebique's system) at Rudmore Wharf, Portsmouth, for Messrs. J. R. Wood & Co., Ltd. Messrs. Lemon & Blizard, MM.Inst.C.E., engineers, Southampton, and 11, Victoria-street, Westminster :—

| | | | |
|---|---|---|---|
| F. Grace..... | £1,267 | Playfair & Toole, Southampton* .. | £1,060 |
| F. Bevis ..... | 1,215 | | |
| R. H. B. Neal & Co. | 1,196 | | |

[Engineers' estimate, £1,150.]

REIGATE.—For private street improvements in Victoria and Redstone-roads, Earlswood, for the Town Council. Mr. F. T. Clayton, C.E., Borough Surveyor, Reigate :—

| | | | |
|---|---|---|---|
| H. M. Blaker .. | £613 15 0 | W. Wilson .... | £496 6 6 |
| Fry Bros..... | 581 2 0 | G. S. Faulkner, Reigate* .... | 459 2 8 |
| T. Free & Sons, Ltd. ..... | 580 10 9 | | |

ROMFORD.—For repairs and alterations at the Council Chamber and offices, for the Urban District Council. Mr. J. Turvey, Surveyor :—

| | | | |
|---|---|---|---|
| E. Pavitt & Sons.. | £107 10 | Partridge Bros., Romford* ..... | £90 0 |
| E. H. & G. Hilliard | 107 0 | | |

ST. ALBANS.—For erecting seven cottages in Catherine and Cross streets, for the Trustees of St. Peter's Charities. Mr. H. F. Mence, Surveyor, Town Hall Chambers, St. Albans :—

| | | | |
|---|---|---|---|
| Barrett Bros..... | £4,350 | J. T. Bushell..... | £2,992 |
| W. Sharp ..... | 3,494 | J. Hammond & Son, St. Albans‡ .... | 2,975 |
| Miskin & Sons .... | 3,167 | H. J. Skelton.... | 2,845 |
| Vail & Shore..... | 3,087 | | |

‡ Accepted subject to modification, the lowest three retendering.

ST. PANCRAS.—For reconstruction of playshed and provision of a recreation-room at Leavesden Schools, for the St. Pancras Guardians :—
Vale & Shore, Heath-road, St. Albans* £569 10

SLEAFORD.—For water-supply works, Wilsford, for the Rural District Council. Mr. W. B. Marsden, Engineer and Surveyor, 74, Southgate, Sleaford :—

| | | | |
|---|---|---|---|
| Mather ..... | £2,946 14 6 | Gladwin .... | £1,013 0 0 |
| Kennington .. | 1,152 12 6 | Maxey & Sons | 1,010 0 0 |
| Clarke ..... | 1,104 0 0 | Hill ..... | 1,008 0 0 |
| Sherwin..... | 1,050 0 0 | J. T. Barnes, Sleaford* .. | 1,005 10 0 |
| Langley & Westmoreland ..... | 1,015 0 0 | | |

SOUTHAMPTON.—For private street works in Arthur-road, for the Corporation. Mr. J. A. Crowther, Borough Engineer. Quantities by Engineer :—

| | | | |
|---|---|---|---|
| F. Grace ..... | £950 12 0 | J. Douglas, Southampton* | £898 0 0 |
| F. Osman..... | 921 0 0 | | |

STAINES.—For extension of the Kingston-road Council Schools, for the Middlesex County Council. Mr. H. G. Crothall, Architect to the Education Committee :—

| | | | |
|---|---|---|---|
| F. G. Minter ..... | £797 | Francis & Co., Ltd.. | £720 |
| A. Jordan ..... | 788 | Dorey & Co., Ltd. .. | 710 |
| C. F. Kearley ..... | 772 | T. J. Hawkins & Co.‡ | 685 |
| W. Lacey ..... | 728 | | |

‡ Recommended for acceptance.

STANLEY.—For road improvements between Shield-row Brewery and West Shield-row Villa, for the Urban District Council. Mr. J. Routledge, Surveyor, Council Offices, Stanley :—

| | | | |
|---|---|---|---|
| E. Dyson .. | £1,544 0 2 | Johnson & Strong.... | £1,205 9 1 |
| J. W. Robson | 1,467 12 6 | J. McLaren, Gosforth * | 1,108 9 4 |
| G. E. Simpson | 1,315 11 10 | | |
| R. C. Birtley | 1,276 2 9 | | |
| R. Nichol .. | 1,260 14 6 | | |

SWINDON.—For new cellar and alterations at the Great Western Hotel, Swindon Station, for Messrs. T. & J. Arkell. Messrs. Drew & Sons, architects, Regent-circus, Swindon :—

| | | | |
|---|---|---|---|
| Pope Bros. ..... | £515 13 | M. Williams .... | £420 17 |
| H. & C. Spackman | 500 0 | Tydeman Bros.*... | 393 0 |
| J. G. Norman .... | 447 0 | | |

[All of Swindon.]

SWINDON.—For erecting stables in Springfield-road, for Messrs. P. H. Mason & Co. Messrs. Drew & Sons, architects, Regent-circus, Swindon :—

| | | | |
|---|---|---|---|
| J. Lay ..... | £240 0 | Pope Bros. ..... | £169 0 |
| Tydeman Bros. .. | 189 12 | H. & C. Spackman* | 159 0 |

[All of Swindon.]

SWINDON.—For new shop-front, etc., 94, Victoria-road, Swindon, for Mr. T. Arkell, J.P. Messrs. Drew & Sons, architects, Regent-circus, Swindon :—

| | | | |
|---|---|---|---|
| W. J. C. Tarrant .. | £175 8 | Tydeman Bros..... | £168 0 |
| H. & C. Spackman.. | 170 0 | Pope Bros.* ..... | 150 0 |

[All of Swindon.]

WANDSWORTH.—For paving part of Smeaton-road, Southfield, for Wandsworth Borough Council. Mr. H. J. Marten, Borough Surveyor, 215, Balham High-road, S.W. :—

| | | | |
|---|---|---|---|
| Sheppard & Packham | £291 | J. E. Etheridge .... | £219 |
| Potter & Co..... | 227 | E. Parry & Co..... | 219 |
| S. Lane ..... | 224 | J. Mowlem & Co., Ltd. | 202 |
| T. Adams ..... | 219 | R. Dykes† ..... | 200 |

[The estimate of the Borough Engineer and Surveyor was £208 10 5.]

WOODHALL SPA.—For laying 1,160 yds. super, of limestone tarmacadam on footpaths, for the Urban District Council. Mr. E. E. T. Bolton, Surveyor, Woodhall Spa :—

| | Per yard super. s. d. |
|---|---|
| Adamant and Asphalte, Ltd..... | 2 3 |
| Tarmac, Ltd. ..... | 2 2 / 1 10 |
| J. Wainwright & Co., Ltd..... | 2 0 |
| Val de Travers Paving Co., Ltd. ..... | 1 10 |
| North of England Asphalte Co. ..... | 1 9½ |
| E. Knight..... | 1 9 |
| M. Ingham & Co..... | 1 9 |
| Northern Asphalte and Roofing Works Co. | 1 9 |
| R. Radford ..... | 1 8 |
| Constable, Hart, & Co., Ltd. ..... | 1 7 |
| J. Smart & Co., Matlock* ..... | 1 6½ |


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